

FISCAL YEAR 2021



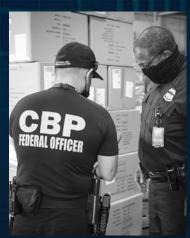
DELIVERING SECURE AND RELIABLE INFORMATION TECHNOLOGY SERVICES AND CAPABILITIES AT THE SPEED OF MISSION





OFFICE OF INFORMATION AND TECHNOLOGY







YEAR IN REVIEW





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Introduction



INTRODUCTORY MESSAGE



At the end of an exceptional and unforgettable year, I am pleased to present the OIT Year in Review Report for fiscal year 2021.

As the largest information technology (IT) organization in the Department of Homeland Security (DHS), with a budget of \$1.8 billion, CBP's Office of Information and Technology plays a vital role in protecting and supporting our national security and prosperity. We are dedicated and proud to provide 24/7 year-round support, in close collaboration with our trusted partners, for the entire CBP mission.

I want to thank the exceptional CBP and OIT workforce and leadership teams. I feel fortunate to work with a skilled and devoted group of professionals. The culture we have built and the accomplishments we have realized this year are incredible. Thank you.

OIT: Delivering Information Technology Services at the Speed of Mission.

The OIT Year in Review Report showcases the many milestones reached during FY 2021, organized into three notable topic areas:

1. CBP OIT Support for National Historic Events

Operating during a global pandemic, responding to and supporting Afghan evacuations as part of Operation Allies Welcome/Refuge, enabling CBP's Border Operations, and ensuring CBP cybersecurity in the face of ever-evolving threats.

2. DHS CIO Support

Working across DHS and federal partners to support DHS CIO priorities and achievements on topics including Cybersecurity, IT Infrastructure and Operations, Office 365 Expansion, Software and License Management, and Cloud Adoption.

3. CBP OIT Support for the Mission

Moving from tactical to strategic and aligning to six focus areas, OIT has achieved the best results ever while transitioning to more effective and efficient enterprise-wide service models and innovative solutions for mission success.

From the accomplishments and momentum achieved in FY 2021, OIT will continue to strategically enhance our services and mission response in FY 2022. We are prepared to thrive despite the challenges that are inevitable in our changing mission landscape. We look forward to providing you with best-in-class IT services where and when you need them as we work together to achieve mission success.

Sincerely,

Sanjeev (Sonny) Bhagowalia

Assistant Commissioner (AC), Office of Information & Technology (OIT)

CBP Chief Information Officer (CIO)

OIT EXECUTIVE SUMMARY





DHS CIO Fiscal

Year 21 Priorities

Zero Trust Use

CBP OIT: A DAY IN THE LIFE

- 1,700+ locations nationally
- Process 915,786 passengers, vehicles, or containers
- \$6.64 billion in imported goods
- 90,000 entries of merchandise at air, land, seaports
- \$216M in duties, taxes and other fees



National Historic Events





TIC 3.0 Implementation

Office 365 Expansion

Cases







CBP OIT Support

CBP's IT landscape is expansive and provides 24x7 mission support across 1,744 locations nationally. OIT meets enterprise mission needs using capabilities and tools developed to modernize infrastructure, improve cybersecurity, and expand enterprise applications.







Southwest Border Support



Cybersecurity Efforts



COVID 19 Response



The expansion and enhancement of Dashboards in FY21 was a priority project that further streamlined access to information, enhanced transparency, and improved delivery.



Enterprise Architecture assists in optimizing the interdependencies among CBP's mission and business operations, and the underlying IT and IRM that support them.

FUTURE VISION

In FY22, OIT will strive to deliver enterprise services and applications at the speed of mission. OIT will use the tools its developed to keep modernizing, enhancing cybersecurity, increasing network connectivity, and to support ongoing innovations to keep pace with evolving mission needs.

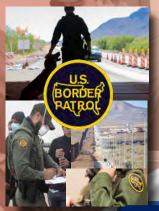
HISTORICAL EVENTS

Our nation and our agency increasingly call on OIT to meet the challenges of an unpredictable and ever-changing environment. OIT support is crucial to address threats and solve problems in the digital age. The people of OIT distinguished themselves with their commitment and willingness to volunteer to overcome every obstacle the agency faced this year.

The partnership between OIT, OFO and TSA ensured a safe and orderly return of the U.S. withdrawal from Afghanistan. OIT provided 24/7 support across five U.S. airports to support processing in addition to volunteers staffing the OIT Incident Command Center. OIT support expanded across interagency and outside agency partners to contribute to mission success.

Operation
Allies Welcome





Southwest Border
Support

FY 2021 saw records of undocumented noncitizen encounters at the Southern Border and thousands of people admitted into the U.S. to pursue asylum. OIT developed software, deployed functionality, and worked with government and non-government partners, such as ICE HHS, and other agencies, to ensure safe and orderly processing of thousands of families seeking asylum in the U.S.

COVID-19 Response

OIT continued to lead the way with partners in CBP's response to COVID. The OIT team quickly developed an integration with DHS Vaccinate Our Workforce (VOW) application to aggregate the CBP data into the Workplace Incident Tracker (WIT) Vaccine Tracker. OIT's response led to early vaccination opportunities for frontline CBP staff and resulted in a ten-fold increase in vaccinated DHS workers merely two months after initial production.

% of total population with at least one dose of the vaccine in U.S.



Cybersecurity



The cyberattack against SolarWinds products impacted more than 300,000 clients globally, breaching not only U.S. government agencies, but also the U.K. Government, NATO, the EU Parliament, and others. In response, OIT isolated affected software versions and conducted thorough analysis of network traffic and affected hosts. CBP's cybersecurity controls and technical mitigations prevented compromise and shielded CBP from this attack. OIT **implemented over 300 DHS Insider Threat Operations Center supplied indicators** onto CBP's unclassified systems, **pushed out a new antivirus solution to 110,000 endpoints** in 30 days and established CBP's first Cyber Threat Hunting program.

DHS CIO SUPPORT



CBP OIT continued to make progress in FY 2021 toward DHS and CBP mission goals, undertaking numerous efforts in support of the six identified DHS CIO Priorities. A selection of key activities are highlighted below.











FY 2021 Highlights



Zero Trust Use Cases



Office Automation Productivity Suite

- Achieved a zero-trust security model, ensuring a consistent cybersecurity posture.
- Deployed new tool to ~1000 CBP users
- Implemented Identity Services Engine Closed
 Mode at 101 sites
- Completed 100% of upgrades on 3,000+ workstation across the Southwest Border
- Transitioned all users to a collaboration tool
- Converted CBP's M365 licensing model to groupbased licensing creating management efficiencies



Trusted Internet Connection (TIC)



Software License Management

- Worked in lockstep with DHS to replace existing network solution and implement Extranet gateway
- Eliminated dependency on OneNet
- Implemented and tested TIC 3.0 Extranet infrastructure with all CBP and DHS stakeholders
- Established tools and process leading to annual savings of \$723,000 on Software Maintenance
- Reduced duplicate procurement efforts
- Coordinated license assignments and procurements within CBP to 8 per year reducing acquisition time



IT Infrastructure & Operations



Cloud Adoption & Data Center Optimization

- Exceeded target of 98% Network availability and achieved an average availability of over 99%
- Met FY 2021 High Value Asset Mean Time to Repair target accross all application
- Repair target accross all application
 Implemented Message Queue Internet Pass Through
- Migrated 45% of the CBP application portfolio, exceeding the 33% migration goal.
- Established Cloud Center of Excellence
- Saved \$5M as a result of application migrations off one platform to another

In adherence with authorities and DHS mission goals, OIT worked collaboratively across DHS agencies in FY 2021 to support and accomplish key initiatives for cost savings, operational efficiency, and national security within DHS.





MISSION APPLICATIONS

Ensures the right IT capabilities and data availability to meet the speed of mission.



HIGHLIGHTS



Leveraged Robotic Process Automation (RPA) to automate more than 45 workflows, saving thousands of hours of effort.



Adapted the Automated Commercial Environment (ACE) workforce to a mobile model and developed the Electronic Advanced Passenger Information System (eAPIS), which contributed to a vital COVID-19 response.



Advanced and deployed biometric comparison capabilities as features in applications such as Simplified Arrival (SA), Automated Targeting System (ATS) Mobile, and the newly-released CBP One™.

MISSION APPLICATIONS

EMERGING TECHNOLOGY/TECHNOLOGY MODERNIZATION

Robotic Process Automation

ACE Quota HI-LO Tuna Proration Tuna Bot: The Tuna Bot culminated from a collaborative development effort between OIT and the Office of Trade (OT). It is the most complicated to date of the three Bots developed in conjunction with OT. It included an input spreadsheet of over 30 data elements for each line to be prorated. The Tuna Bot performed the summary edit functions associated with entries that qualify for reduced duty rates based on the 2021 Tuna Quota Opening Moment.



De-obligation Bot: The Office of Procurement and OIT partnered to create an automation that eases the burden of performing long hours of manual contract deobligations. Currently in production, the DeobBot is designed to help recover unspent dollars in a more efficient manner and return millions to CBP.

Enterprise Architecture (EA): OIT released the CBP Technical Reference Architecture (TRA) to move CBP toward more standardized and interoperable solutions while reducing redundant licensing costs and incompatible formats. The TRA provides guidance on which technologies should be used, what mature examples of the technology look like, and how to put together capabilities. The TRA provides program managers an easy reference to understand technologies CBP has adopted and ones it has decided not to use. The CBP EA program will continue to mature in the coming year and ultimately provide programs the information they need to become more resilient, more effective, and more economical in supporting the CBP Mission.

HIGHLIGHTS

ACE Quota HI-LO Tuna Proration Tuna Bot
The Bot duplicated and adjusted 1,067
lines in 2021 that cover over 18.3 million
kilograms of tuna, providing
significant labor savings. Our
trade partners benefited with
over \$5.6 million in duties saved.

DeobBot is designed to help recover **unspent dollars** in a more efficient manner and **return millions to CBP**.

Since launching **CBP One** in October 2020, it has been **downloaded over 60,000 times**.

CBP One: OIT launched both the CBP One™ mobile app on Google Play and Apple App stores, and the CBP One Web Application. CBP One™ functions as an intuitive single portal for travelers and stakeholders to access CBP mobile apps and services such as CBP ROAM, I-94, and appointment features. The first phase of CBP One™ included the I-94 traveler and broker functionalities. The I-94 Entry feature enables travelers to apply for a provisional I-94 prior to arriving at a land border crossing. The first phase also included the mobile ability to request an inspection of perishable cargo. The inspection appointment request feature enables brokers, carriers, and forwarders to request an inspection time for perishable cargo entering the U.S.

OIT also deployed the "Advance Information for Undocumented Non-Citizens" submission process within the CBP One app. The process allows individuals to submit personal

information and select a requested arrival time in advance of arriving at a POE. The advanced collection of this information improves processing.

OIT completed development of a new CBP One™ app feature that enables TSA officers to query biographic data by capturing a photo or entering a number (A-number) to verify the individual's identity. This helps track paroled migrants within the U.S. OIT also added a third query that International Organizations (IOs) can use to find subjects and case statuses. This third query option allows IOs to search by name and date of birth in addition to photo and A-number. The IOs use CBP One[™] to verify that a migrant is enrolled in MPP with a pending

court date. OIT began development on the I-94 backend to support functionality that pulls biographic data from an I-94 form using an A-number. This will allow CBP officers to process migrants using their I-94. OIT continuously adds additional features to CBP One™.

CBP IdeaHub has launched and maintained 18 campaigns across CBP. The campaigns have produced 680 ideas, 8,500 votes, and 924 comments.



Eventually, aircraft operators, bus operators, seaplane pilots, commercial truck drivers, and commercial vessel operators will be able to use the app.

IdeaHub: CBP IdeaHub launched in May 2021 as an enterprise-wide platform that promotes idea sharing and crowdsourcing solutions to common work issues. Idea Hub campaigns pose mission-specific questions to targeted audiences who propose solutions. Employees submit ideas and solutions and can vote and comment on their colleagues' ideas.



ENTERPRISE ANALYTICS

OIT undertook critical initiatives to augment risk-based decision making and address evolving and unique challenges in border security. OIT provides direct support to the National Targeting Center (NTC) for enduring mission priorities, including threats to national security, narcotics trafficking, human trafficking and smuggling, and trade violations.

Operation Roxanne Automated Targeting: The team developed innovative methods utilizing financial data in support of active NTC operations and Homeland Security Investigations (HSI). "Operation Roxanne Automated Targeting Report" successfully informed the identification of two large-scale sex trafficking organizations, which led to criminal investigations.

The team also designed, developed, and deployed several new risk models, model releases, and refreshes to address specific cargo and passenger threat paths. These models ensure cargo safety to include mitigating the risk of explosives smuggling and target narcotics smuggling by land, air, sea and passenger trafficking.

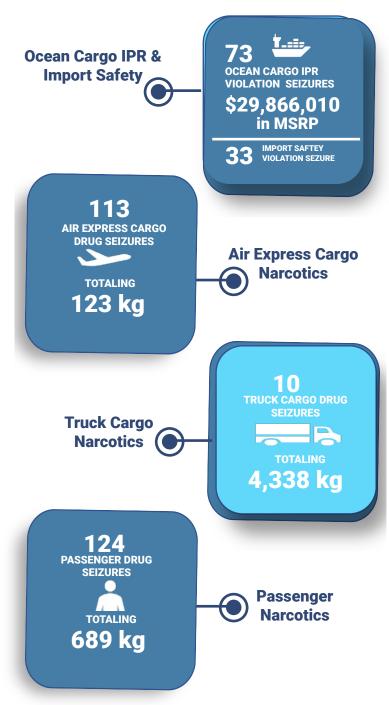
HIGHLIGHTS

Operation Roxanne Automated
Targeting: The team integrated threat
research, findings, and business
knowledge derived from direct NTC
support (including 400 intelligence
summaries, 108 Intelligence
Reporting System – Next
Generation intelligence
products, and 48 post seizure
analyses) into targeting features.

The team also designed, developed, and deployed several **new risk models**, model releases, and refreshes to address

The following high-level statistics offer a snapshot of OIT's operational impact on CBP's dual mission of border security and facilitation of legitimate trade and travel.

Key Operational Statistics as a Result of Advanced Analytics Models *



*IPR seizures reflect event counts. Non-IPR seizures reflect counts by drug type.

specific cargo and passenger threat paths. These models ensure **cargo safety** to include mitigating the risk of explosives smuggling and **target narcotics smuggling by land, air, sea and passenger trafficking.**

Advanced Analytics Direct Support to NTC

Additionally, OIT provided vital support to CBP's enterprise reporting and strategic situational data visualization and analysis mission area, including dashboard support and reports, on-demand data requests, and NTC strategic reports and statistics.

Advanced Trade Analytics Platform (ATAP):
OIT coordinated with OT to design the architecture of the Advanced Trade Analytics Platform (ATAP), which offers a single, organized point of access for CBP stakeholders. The OIT ATAP program began the implementation and configuration of the data platform, which will ingest, process, and enable access to all CBP's internal and external sources of data. It will also provide inherent data analysis capabilities and machine-learning options critical to the operations of the Advanced Trade Analytics Center (ATAC) in OT.

ATAP Section 321 Dashboard: OIT provided technical support to OT's operational data science team to help them facilitate the development and delivery of ATAP's first analytic model. The model investigates potential violations related to Section 321 de minimis shipments. After initial development, the data science team successfully pivoted the modeling effort to examine manifest filings, which resulted in the identification of violative shipments with an average of 172,000 violative shipments that have a value of more than \$55 million.



The success of the dashboard led to the creation of "Carrier Report Cards" that note the primary violators and amounts in violation, aid informed compliance efforts by CBP. It also led to the development of an interactive dashboard CBP uses to monitor possible de minimis violations on an ad hoc basis to increase monitoring and oversight from the express carriers with their violating clients.

TRAVEL FACILITATION

The Traveler Verification Service (TVS) is a cloud-based facial matching solution that identifies travelers entering and exiting the country via land, sea, and air. Since initial deployment, CBP has received over 50 commitment letters from airline and airport authorities, as well as from all major cruise lines, to outfit their ports with photo capture solutions that interface with TVS. In FY 2021, OIT continued to improve TVS to support facial recognition capabilities in applications such as Simplified Arrival (SA) for air, land and sea and the Automated Targeting System Mobile. These facial recognition capabilities have supported multiple use cases along the southwest border in FY 2021, including expedited processing at southwest border ports of entry and checkpoints for individuals who are enrolled in the Migrant Protection Protocol (MPP) program, undocumented noncitizens excepted from Title 42 travel restrictions, or individuals previously released under prosecutorial discretion in FY 2021 for Southwest Border support.

OIT worked to leverage cutting-edge technology to transform traveler verification and dramatically reduce the need to verify physical travel documents and to integrate information across applications while improving the user experience and keeping passenger travel secure. Passenger applications are leading the way for innovative technologies, such as the in-house CBP-developed Mobile Passport Control application that was released nationwide in July 2021 for passengers to download on their personal mobile devices.

The Trusted Traveler Program (TTP) and OIT are partnering with vendors to pilot new technology that streamlines the Global Entry (GE) processing experience. In April 2021, OIT piloted the use of eGates at Dallas-Fort Worth Airport. The eGates are electronic gates fitted with physical barriers and equipped with state-of-the-art cameras that use facial comparison technology to confirm traveler identity and make an admissibility decision for contactless processing. Instead of using the GE Kiosks, travelers are directed to enter an eGate, where the camera captures their photo for vetting using facial biometrics. An officer, using a tablet, can view the traveler's photos and referral codes. If the traveler is granted access, a message displays and the gates automatically open.

In addition to the eGates pilot, OIT worked to pilot facial recognition totems at Los Angeles International Airport (LAX). The team worked with several vendors to supply LAX with totems, also known as stands, that contain a tablet equipped with cameras and a document reader. The totems use facial recognition technology that sends traveler information through one-to-one matching. Using the document reader, the totem verifies the passport e-chip and transmits information for comparison through TVS. These devices reduce document handling, increase officer safety, and reduce delays in passenger travel.

METRIC HIGHLIGHTS

TVS is deployed for use:

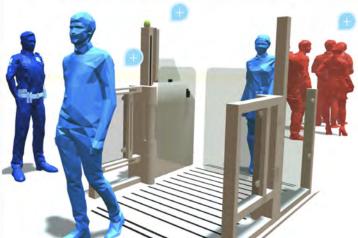
- In primary processing at 44 airports,
- At 17 preclearance locations,
- At numerous private aviation sites to support both Simplified Arrival and Mobile Primary,
- For Air Exit confirmations at 34 locations; and for primary processing at a 129 locations (Air Entry),
- For sea processing at 13 Sea Cruise Ports of Entry (POEs),
- At 105 pedestrian land POEs across all southern and northern borders.

OFO has confirmed over **102,000 visa overstays** and identified **842 imposters** through biometric scans.

Since its implementation, the average processing time for a traveler using the eGate is 3.5 seconds and over 4,065 travelers have been processed in DFW using eGates.

There are approximately 9.6 million travelers enrolled in TTP with 7.2 million of those in GE. Membership growth exceeded 200,000 in FY 2021. Prior to COVID-19, Global Entry applicants with a conditionally approved application made in-person appointments for enrollment processing. During the pandemic, video conferencing capability added an alternative to in-person interviews to assist with an increase of 350,000







To modernize the travel inspection process, OIT initiated the Cruise Vessel Initiative (CVI). Utilizing CVI, CBP officers received enhanced data through the Advanced Passenger Information System (APIS) using algorithms and system components to produce better analysis and search results. In July 2021, the CVI system received and processed 4,177 and 4,060 passengers and crew members 24 hours in advance of cruise departures.

conditionally approved applications and a growing backlog of applicants. Since the February 2021 implementation, the remote interview process has reduced that number by more than 2,200, and there have been more than 5,643 successful interviews. Interviews were conducted across 24 countries and 48 states.

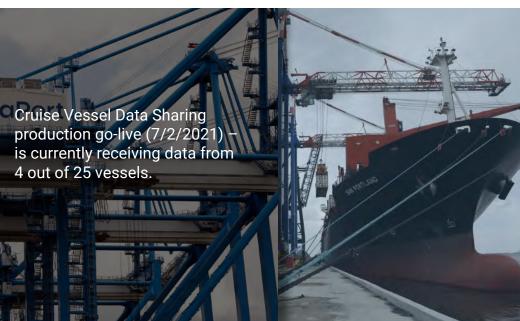
OIT also increased the commitment to Enrollment on Arrival (EoA), which allows a traveler who has been conditionally approved through initial vetting to complete their enrollment at a primary inspection booth within the Federal Inspection Service area. As of July 2021, over 508,000 GE applicants completed the enrollment process through EoA, and it became part of the Simplified Arrival (SA) Air application. Integration allows CBP primary officers to finalize EOA for passengers with a conditionally approved GE application from the SA Air system. The EoA and SA integration expedited the GE enrollment process at 74 SA participating airports and is expected to expand to

The GE team also worked hard to modernize and upgrade the GE kiosks. Some of the team focused on modernizing GE and shifting it to the cloud, while other team members worked to upgrade the physical kiosks for use with facial recognition. Out of 825 kiosks deployed in the field, 647 were fully upgraded for use with facial recognition.

Another 247 kiosks were upgraded in FY 2021, and the remainder will be completed in FY 2022.

all airports.







SA Air and SA Sea together replace the legacy Traveler Primary Arrival Client application and incorporate the use of facial biometrics for traveler entry processing, which reduces the need for fingerprint capture for return visitors. **The** Simplified Arrival PreDepart application uses facial biometrics, an enhanced user interface, and business logic to process travelers that are leaving St. Thomas and are traveling back to the U.S. SA Sea is now deployed to 10 seaports, and SA Air is now deployed to over 180 airports.





The SA team focused on mitigation strategies and resiliency by adding functionality for Advanced Passenger Information System (APIS) mitigation. The SA application now mitigates an APIS outage and allows the officers to continue to utilize it even with degraded services. In February 2021, SA Vehicle implemented biometric facial match. SA Vehicle will be deployed to two lanes at Anzalduas, Texas, to expand the use of biometric technology.





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Customs and Border Protection.

OIT modified SA-Pedestrian (SA-PED) to support MPP initiatives and to enable CBP officers to process migrants who had an MPP case on file. Over 12,000 MPP cases were processed in land pedestrian primary inspection. In May 2021, SA-PED was modified to process non-MPP for individuals who did not have an MPP case on file. Over 9,000 non-MPP cases have been processed in land pedestrian primary inspection. In June 2021, SA-PED was modified to enable officers to process MPP Motion to Reopen (MTR) cases, and 25 MTR cases have been processed since June.

OIT's Land Border Integration (LBI) Dashboard Project develops, implements, and maintains the Operations and Maintenance Dashboard system for LBI and stakeholders to view, monitor, and configure LBI border technology solutions deployed nationwide. The dashboard helps diagnose and resolve issues reported from the field or automatically identified by the system. The LBI Dashboard provides users a live map view of solution statuses around the country. Over the past year, the LBI Dashboard Project team has migrated the system from on-premises hosting to the cloud while working on enhancements. These enhancements include new and updated reports, performance optimizations, integrating new technology solutions, and migrating asset management functionality to CBP ServiceNow.

In June 2021, OIT built the LBI Integrated Traveler Initiative Inventory Lifecycle Management (ITI-ILM) application. This provides a central application for tracking and automating legacy methods involving shipping, receiving, inventory control, asset creation, and the submission of CBP assets for

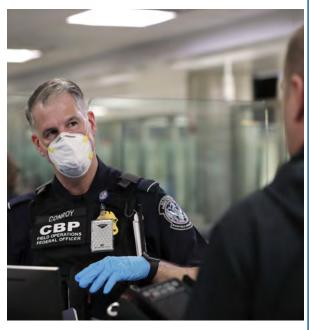
reconciliation. The ITI-ILM application also manages end-user equipment and service requests by and for the Engineering teams at the Contractor Test Lane Facility (CTLF) and the Operations and Maintenance (O&M) teams. With the recent deployment of version 2.1, the application has improved logistics and asset management support by streamlining the workflow and increasing inventory accuracy.

The Consolidated Secondary Inspection System (CSIS) provides CBP officers with a web-based application to support admission and enforcement decisions for secondary processing. CSIS consolidates and replaces the functionality of three legacy applications, displays information that was provided at the primary entry point, and provides single sign-on access for ease and efficiency to the end user. The CSIS team implemented significant changes this year, including added support for Migrant Protection Protocol (MPP) and Non-Intrusive Inspection (NII) referrals. CSIS provided significant support to the Unified Secondary (USEC) application, with the ability to allow USEC to create Primary Lookout Override (PLOR) for National Crime Information Center (NCIC) hits associated to referrals from Automated Commercial Environment (ACE). The added functionality enabled the processing of referrals from ACE Truck Modernization and the capability to send notifications to ACE Truck Modernization upon closing out of ACE referrals from USEC.

In the Arrival and Departure Information System (ADIS), a data aggregation system that contains the travel history and immigration status for over 364 million unique individuals, OIT implemented new web services to share Travel History data with Simplified Arrival applications. The new interface shares travel history data with the Intelligence Community and can validate Migrant Protection Protocol (MPP) and non-MPP referrals in both ADIS and TDED. Additionally, ADIS now handles pending and denied claim requests for Protected, Asylee/Refugee and Temporary Protected Status (TPS) persons, and receives and saves the confirmation number that is associated with an undocumented non-citizen traveler.

ADIS also leverages data to assist other federal agencies in achieving efficiencies. The Social Security Administration (SSA) integrated travel data into their business processes, and 192,228 ADIS queries returned with travel results. helping SSA to identify material travel that resulted in overpayments. SSA reviewed a random sample of 125 cases with travel data returned from a workload cohort of





10,000 non-U.S. citizen Supplemental Security Income (SSI) eligibility reviews conducted from October 2019 to February 2020. The ADIS data helped SSI save an estimated \$4,818 per case. Another review of a random sample of 125 cases with travel data yielded an estimated savings of \$5,601 per case.

Ultimately, access to the ADIS data reduced SSA's sole reliance on self-reports of material travel. For the 5-year period of fiscal years 2015 through 2019, absences from the U.S. attributed to an average of \$115 million in overpayments in the SSI program. Accessing the ADIS data via SSA's Foreign Travel Data (FTD) application has become a key initiative of their agency's improper payments mitigation strategy and based on SSA's current use of the ADIS data, FTD's return on investment (ROI) is an estimated 656.04%.

Contact Tracing: OIT moved quickly in 2021 to respond to current events and global situations. In March and April of 2021, the Electronic Advanced Passenger Information System (eAPIS) contact tracing system was deployed.

INTELLIGENCE SUPPORT

The Analytical Framework for Intelligence (AFI) added the following data sources to authorized users:

- Passenger Name Records.
- · Diversity Visa Applications.
- Seizure and Apprehension Workflow (SaAW) Interview Notes.
- Financial Crimes Enforcement Network (FinCEN) Suspicious Activity Reports.
- Biometric Transnational Migration Alert Program
- Consular Electronic Application Center (CEAC) data sources.

OIT used AFI and the Intelligence Reporting System – Next Generation to assist with the authoring, publication, and dissemination of over 28,000 finished intelligence reports ranging from counterfeit vaccines/vaccination cards to domestic violent extremism. In FY 2021, OIT added the Cybersecurity and Infrastructure Security Agency (CISA) Integrated Operations Division/Intelligence to the list of agencies authorized to access AFI. AFI also made significant updates to its mapping tools. The updates were made through collaboration with the Office of Intelligence's Regional Intelligence Centers and have been used in support of intelligence operations.



INTERNATIONAL COORDINATION

OIT expanded CBP's international footprint and partnerships by successfully deploying the Automated Targeting System – Global (ATS-G) to three new countries. The three new deployments increased CBP's information sharing posture and cooperative relationship with foreign countries, particularly in the mitigation of risks associated with criminal and terrorist exploitation of international travel.

Unified Passenger (UPAX) Global continues to play a vital role in the support and expansion of Biometric Identification Transnational Migration Alert Program (BITMAP). Secure Real-Time Transportation Protocol Version 2 was fully deployed with both inbound and outbound queries with one new foreign partner and development with two additional countries underway. The program serves as a qualifier for the Visa Waiver Program (VWP) member countries and aspirant countries to meet Visa Waiver Program (VWP) information sharing requirements pursuant to an Enhanced Border Security Agreement or a Preventing and Combating Serious Crime Agreement. Global Targeting as a Service (GTAS) compliments the U.S. approach for foreign partner engagement in air passenger security, opens new doors for interagency communication in support of the mission while providing a direct avenue for countries to comply with United Nations Security Council Resolutions 2178 and 2396.

eCERT Modernization

OIT modernized the eCERT system by streamlining electronic data transmissions of information normally associated with a required export document, such as a license or certificate, to facilitate the administration of quotas and ensure that the proper restraint levels are charged without being exceeded. Imported quota certificate product entered or withdrawn from warehouse, for consumption must match the eCERT transmission of an export certificate from Uruguay for an importer to claim the in-tariff quota rate.



METRIC HIGHLIGHTS

ATS-G deployed in three new countries.



Provided system upgrades for eight countries.



UPAX Global deployed SRTP v2 with one new country and began development with two additional foreign partners.



Multiple Maldives Agencies deployed GTAS with a roadmap for interagency intelligence sharing.

GTAS is the first Foreign Partner Air Passenger Application to be deployed in the Cloud.

US is the largest global producer of beef and the largest global importer of beef.



The Annual Uruguay Beef quota is 20,000 Metric Tons and Uruguay typically uses their full amount.

From the Uruguay region alone, over 10,000 entries come into the US annually.

eCert can be an enforcement tool to detect and prevent the use of falsified, incorrect or out-of-date information to reduce misuse of quota classifications.

eCert provides the exporting country with control and monitoring of their quota usage and improves the US ability to monitor for non-certified quota goods. In FY 2021, CBP announced that the export certification requirement for certain imports of beef from the Oriental Republic of Uruguay (Uruguay) subject to a tariff-rate quota will be accomplished through the Electronic Certification System (eCERT). All imports of beef from Uruguay that are subject to the tariff-rate quota must have a valid export certificate with a corresponding eCERT transmission at the time of entry, or withdrawal from warehouse, for consumption. This modernization cuts down processing times from weeks to seconds by processing in real time, reducing manual processing and human error. CBP looks forward to continuing this partnership with other countries such as Canada, Mexico, and the United Kingdom.



TRADE FACILITATION

COVID-19 Relief realized through ACE: The Automated Commercial Environment (ACE) workforce seamlessly transitioned to a full mobile work model and supported a steady and legitimate import and export of COVID-19 vaccinations, COVID-19 testing, Personal Protective Equipment (PPE) and medication to and from partner government agencies and countries. The team supported the ability to bring the supply chain directly to America's doorstep and lessening the burden on vital frontline workers.

TMF Modernization: ACE Collections was the first in DHS and CBP to be awarded Technology Modernization Fund (TMF) funds. With this established partnership, ACE Collections continues to provide a stellar example for future DHS and CBP submissions modernizing through the Technology



Cloud Migration: There were 16 applications migrated to cloud-based infrastructure in FY 2021. Notably one of the migrations included the Truck Manifest Electronic Message Handling (EMH) with the support Free and Secure Trade Program (FAST) Electronic Data Interchange (EDI) message syntax and profile validations cloud. The Truck Manifest EMH will allow CBP to shut down additional portions of the mainframe including the Data Interchange (DI) translator that currently processes FAST messages. As OIT transitions additional ACE applications to the cloud environment, OIT bolsters the system's security, increases automation, reduces risk of human error, streamlines the collection processes, and improves accountability.



Collections Release 2 – Collections Information Repository (CIR) Processing: ACE CIR processing was built off the framework developed in Release 1.0, the Automated Clearing House (ACH) enabled ACE Collections to process additional electronic payments, such as Fedwire, Pay. gov, and SEACATS (all except lockbox). The release reduced manual processing of electronic payments, improved the collections reconciliation, and included a SEACATS validation.

Collections Release 3 - Deferred Tax: This release consolidated importers' deferred tax entries onto one deferred tax statement. This enhancement reduces the annual number of manually processed deferred tax bills and reduces manual processing time for the Office of Finance's Revenue Division. For the first time, the trade can view deferred tax bills in ACE Reports and use their existing ACH debit setup to pay bills electronically using ACH Debit and ACH Credit. Completed data conversion for 8.948 entries which created 148 deferred tax bills. This is a 98.3% decrease in the amount of deferred tax bills. Previously those bills would have been manually paid by the Revenue Division, where now in ACE Collections the 148 bills will be automatically paid when payment is received.

Type 86: An operating system fix mitigated the problem of high volume overwhelming the legacy ACE systems that enables processing of incoming data over multiple threads on the interfaces that were being overloaded. This change, in addition to moving the processing to two interfaces instead of one, has increased the processing capacity and lowered processing times for the application. Prior to implementation, the average wait time for processing of Type 86 and other large manifest data was 180 minutes. With the change the processing delay in time of extremely high volume is now less than 15 minutes.

Real Time Automated Surety Interface (ASI):

OIT deployed the Automated Surety Interface (ASI) enhancement to the eBond User Interface (UI) in the Automated Commercial Environment (ACE). This improvement expands the data provided to sureties and surety agents in real-time, via the Bond Status (BS) message, with the goal of replacing the current nightly and quarterly downloads that provide users with ACE Cargo Release and post-release processing information (the ASI downloads (AS, AQ) are still available). Additionally, these enhancements will provide CBP users with a real-time view of the issuance of all bond status notifications via the ACE eBond UI and the ability to resend status notifications directly from the eBond UI.

Foreign Trade Zone (FTZ) Enhancements to ACE: OIT deployed Phase II of e214 Online in the Automated Commercial Environment (ACE), enhancing the existing electronic Foreign Trade Zone (FTZ) admission capabilities for both the trade community and CBP. These enhancements give CBP greater oversight and control over the FTZ admissions process by requiring officer review and approval for certain electronic transactions before they can take effect. The new approval process provides the trade community with greater flexibility to amend admission data. This release also

introduces a tighter integration with CBP's Manifest system, allowing both trade and CBP users to modify Permit-to-Transfer data directly within the e214 ACE application or via an Electronic Data Interchange (EDI) transaction. In addition, the reporting of merchandise zone status changes by the trade has been updated, allowing CBP users to quickly view all zone status changes submitted on a line item when viewing admission details.

ACE Availability Dashboard: Enables an improved and transparent partnership between CBP and the Trade by establishing the public facing ACE Availability Dashboard to provide the Trade (Importers, Filers and Public) community a faster real time and expanded view of the ACE applications. The dashboard provides increased timely and accurate ACE application status data, system maintenance event scheduling and details and historical system availability information.

Enforce and Protect Act (EAPA) Case
Management System (CMS): Enforce and Protect
Act Case Management System (EAPA CMS)
modernized the multi-cloud application to
production. Having provided notice and training to
internal and external trade community users,
adoption of the system began streamlining the
EAPA allegation and case management process.
The system leverages built-in and custom objects
integrated for cloud-based file storage.
Post-production support of EAPA CMS included
case migration, document migration to the cloud
environment, regression testing and continued
engagement with end users.

United States Mexico-Canada Agreement (USMCA) Drawback Deployment: CBP deployed the United States-Mexico-Canada Agreement (USMCA) changes to the Drawback application in the ACE environment. A first for CBP under this new agreement, this enhancement allows Trade participants to file USMCA Drawback claims for imports dated July 1, 2020, or later under the new trade agreement. Drawback claims for imports dated June 30, 2020, and earlier will continue to be accepted by ACE under the NAFTA regulations until June of 2026 and 2028, depending on the Drawback Provisions being claimed.

TRADE AND TRAVEL FACILITATION

TRAVEL/NATIONAL SECURITY



Over 21% of incoming air travelers processed through automated kiosks or mobile app (APC, MPC, & GE)



370,000 (per day) incoming travelers processed through CBP passenger systems

TRADE



241.3M import cargo entries processed through ACE



13.3M cargo export shipments processed through AES



Over \$123B duties assessed through Trade Remedy Enforcement - Section 201, 232 and 301 Duty Assessment



Over \$2.7T in Total
Goods Value
processed through the
Automated
Commercial
Environment (ACE)



Over \$96B in Duties
Fees, Taxes,
Anti-Dumping Duty,
and Countervailing
Duty collected through
ACE



Processes over 368M commercial import cargo entries through ACE

Over \$3.67B in cost savings realized for CBP and Trade Stakeholders through streamlined processes of ACE capabilities Processes over 20.1M commercial cargo export shipments per year through Automated Export System (AES)

SOUTHWEST BORDER



Over 160 agents were trained on eSignature and the Review and Approval Portal (RAP), as part of the broader Electronic A-File Implementation



CBP Unified
Immigration
Processing (UIP) had
a total of 1.8M
Encounters



Expanded UIP
Modeling functionality
to 125M+ data points,
9000+ Replications,
and 300+ scenarios



1,880 USBP agents executed over 370,000 queries with ATS Mobile In adherence with authorities and DHS mission goals, OIT worked collaboratively across DHS agencies in FY 2021 to support and accomplish key initiatives for cost savings, operational efficiency and national security within DHS.

HIGHLIGHTS

Zero Trust Use Cases: This year OIT worked to achieve a zero-trust security model, implementing new tools that provided continuous automated verification, ensuring a consistent cybersecurity posture.

Trusted Internet Connection (TIC): In concert with DHS priorities to replace the existing network solution, OIT implemented an Extranet gateway and implemented and tested the Extranet infrastructure with all DHS and CBP stakeholders.

Cloud Adoption and Data Center
Optimization: OIT migrated 45% of the CBP
application portfolio, exceeding the 33%
migration goal. Additionally, the Cloud Center
of Excellence was formed and OIT was able
to save \$5M through migrating some
applications off one container to a
more cost-effective one.

IT Infrastructure and Operations: Message Queue Internet Pass Through was implemented to establish encrypted connectivity with the Office of Biometric Identity Management (OBIM).

Southwest Border Support: The unprecedented border surge led to an increased level of coordination between DHS components and other federal agencies who support border processing. In FY 2021, there were over 1.5 million encounters (through August 2021); approximately 132,500 of those were unaccompanied children.

The Laredo Phase-1 coverage Expansion project



Soft Sided Facility Support:



Enforce 3 (e3) Electronic Signature:



OIT supported coverage expansion projects in three USBP sectors.

The Laredo Phase-I coverage expansion project adds 38 sites to enhance coverage along the Rio Grande River at the Southern Border. In Big Bend Sector, OIT's coverage expansion added 23 sites, which minimizes reliance on the region's existing telecommunications service and ensures agents are not stranded in rugged terrain when network links fail. OIT supported the implementation coverage expansion in Tucson Sector by adding seven new sites for San Miguel and seven sites for the Ajo West area. These three expansions increase the tactical communication capability to support mission critical communication.

Soft Sided Facility Support: OIT completed the installation of all necessary technology required to support operational capabilities at soft side facilities (SSFs) in Del Rio, Donna, and Laredo Texas, and Yuma and Tucson, Arizona. OIT supported increased switches and larger circuits to meet the needs of CBP, ICE, DHS, and other agencies via Guest Wi-Fi at the Donna SSF. The team installed all IT equipment necessary for deployment of the Simplified Arrival - Migrant Protection Protocol (MPP) application at ports of entry (POEs) in Brownsville, Hidalgo, Laredo, El Paso, and San Ysidro, Texas for safe and orderly MPP processing. OIT deployed equipment at sites across seven USBP sectors to support the Migrant Property Identification Program, which systematically tracks the property of detained migrants.

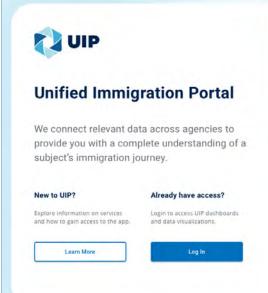
Enforce 3 (e3) Electronic Signature: The e3 portal transmits and stores data for identifying and processing subjects encountered at the border. Biographic information, seized property, photographs, and fingerprints are matched against a DHS database. The Border Enforcement Communication Network (BECN) Review and Approval Portal (RAP) allows USBP to capture electronic signatures for subjects as well as agents and supervisors. OIT launched the first e3 signature capability pilot in Texas at the El Paso Processing Center, and in May 2021, OIT included electronic signature capability for agents to digitally sign using non-repudiation certification.

All USBP Southwest Border sectors received RAP by August 2021. RAP provides the ability for first- and second-line supervisors to review an immigration case file electronically, saving countless hours processing paperwork. The new capabilities also provide cost savings due to reduced consumables, such as paper, toner cartridges, and other equipment.

Unified Immigration Portal (UIP):



Unified Immigration Portal (UIP): UIP is a mission essential system with over 3,500 users across the immigration ecosystem. It connects disparate systems, improves cross-agency collaboration, and increases data transparency to mitigate historical challenges on the Southwest Border. UIP capabilities include 33 interagency dashboards and visualizations and 10 data exchange services for agencies to automate and integrate field and headquarters processes. With UIP, CBP, ICE, USCIS, and the Department of Health and Human Services can access near real-time interagency data to improve their knowledge of an individual's immigration journey after arriving at the Southwest Border.



In FY 2021, the platform rolled out close-to-real-time reporting and predictive modeling tools for The White House, DHS senior leadership, and the Southwest Border Task Force. OIT also deployed a database link that enables UIP to track migrants paroled through MPP. The UIP MPP dashboard also enhanced ICE users' ability to track subjects released back into the U.S.





MISSION INFRASTRUCTURE

A modern, reliable IT infrastructure and 24/7 year-round support services serve as the backbone for technology solutions that deliver critical capabilities at the speed of mission.



HIGHLIGHTS



Maintained overall Network availability of 99.71% trending up from 99.67% last year.



Migrated 45% of CBP's application portfolio to the cloud, exceeding the 33% FY21 migration goal.



Managed 1,153 circuits supporting 923 land-mobile radio (LMR) tower locations, and 1,774 data circuits at 1,271 field sites (CONUS/OCONUS). Upgraded 19 LMR tower circuits and 209 data circuits to modernized Inter-Connection Point (ICP) circuits, providing greater bandwidth capacity, improved availability, and better resiliency.

MISSION INFRASTRUCTURE

NETWORK RESILIENCY

Enforcement Technology

OIT's deployment of 7,000 Harris Radios to USBP included regression testing of the latest firmware releases to enhance capabilities or to resolve existing issues. Additionally, OIT completed the Pilot Tier 1/2 Radio Maintenance/Preventive Maintenance pilot in Tucson, Arizona; San Diego, and Houlton, Maine. The goal of the Tier 1/2 pilot is to establish a process to conduct preventive maintenance locally and reduce dependency on manufacturer repairs. Ultimately, the pilot will reduce the time that CBP agents and officers are without their radios.

OIT assumed antenna responsibilities associated with new Mobile Video Surveillance System (MVSS) and Lightweight Video Surveillance System (LVSS) Mobile Surveillance Capacity (MSC-Lite) trucks. OIT maintains 165 MVSS Trucks and expects to acquire an additional 12 units in FY 2022. MVSS and MSC-Lite maintenance consists of troubleshooting, performing corrective and preventative maintenance, and removal and replacement of Line Replaceable Units (LRUs).

Network Services

USBP is working with OIT to implement Incident-Driven Video Recording Systems (IDVRS) across the nation. IDVRS is a body-worn camera (BWC) system that USBP agents will use to record incident video throughout their shifts and then upload the video to a central location for storage, training, evidentiary use, or operations use. OIT supports the network aspects of implementation to ensure that video from BWCs moves as needed within field sites, between sites, and to the cloud-based storage solution within mission time requirements. OIT evaluated 67 stations across the country that are part of the first four phases of the IDVRS deployment and provided analysis, recommendations, designs, and

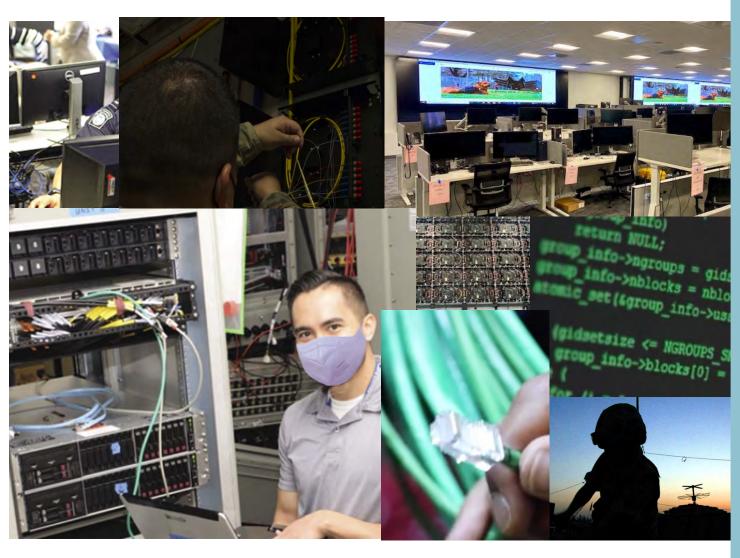
procurement requirements. These upgrades provide USBP agents and leadership access to IDVRS video within 10 minutes of initial upload, meeting mission requirements.



OIT migrated all National Data Center (NDC) traffic to CBP's Inter Connection Point (ICP) network via 100G circuits. This moved NDC from being a OneNet Hub site to an ICP spoke site, a significant step away from OneNet dependency, and further solidifies the move to a CBP managed ICP network. The migration increased network bandwidth speeds and provided three layers of network redundancy, two ICP point-to-point circuits for primary connectivity, an ICP internet circuit for secondary backup, and OneNet circuits as tertiary backup. This move also allowed CBP to reduce the OneNet circuit count at NDC, which provides a significant cost savings to CBP. The increased bandwidth helps boost efforts to migrate applications and data out of NDC, whether to the cloud or other hybrid locations. OIT Network Engineers worked with multiple engineering teams and vendors to ensure the design and methodology integrity. The implementation strategy took into consideration 20 years of NDC legacy application builds and network connections to ensure the legacy system responded well to the network modernization effort.

Network Operation Center (NOC)
Standard Operating Procedures (SOPs)

The NOC consistently reviews and updates its SOPs as part of its quality control procedures. The NOC completed a 100% review of all 156 SOPs (43 were retired due to obsolescence and modernized network technology, 113 remained active). Three (3) new SOPs were added (bringing the active NOC SOP total to 116), and NOC personnel received annual (refresher) training on all active SOPs.





ENTERPRISE OPERATIONS CENTER (EOC)

The EOC prevented, mitigated, and quickly resolved information technology service disruptions impacting world-wide travel, trade, and law enforcement activities through timely adjudication of approximately 1.6 million alerts via its primary monitoring tool. These alerts averaged over 4,000 per day, and the team responded to approximately 8,500 user calls, emails, and self-service tickets each week.

As part of efforts to improve the EOC's significant incident response, the team transformed real-time collaboration of significant incidents by consolidating incident bridge communications into one channel (EOC Significant Incidents) within Teams. The move established a consistent

structure that improved visibility of ongoing incidents for the 700 plus members of the EOC. Additionally, the approach provides searchable records that can be used to improve the EOC's response to future significant incidents.

To ensure EOC IT reporting is transparent and appropriately framed to meet the expectations of CBP leadership, the EOC established a Memorandum of Understanding (MOU) with CBP Watch. The MOU established detailed criteria for immediate notifications regarding significant technology disruptions from the EOC to the CBP Watch.

Change and Configuration Management (CCM):

In concert with the Change Management Centers of Excellence (CMCOE), CCM completed the first major revision of the Enterprise Handbook and Charter. These crucial enterprise documents establish governance, provide guidance, and define the protocols that conform with industry standards. Additionally, CCM was able to successfully lead the migration to a new Change Management Module in an updated platform that maintains the Change Records for 3,600 production changes applied to the CBP enterprise on average annually. This migration ensures records conform with proper records management, historical preservation, and integrity of the artifacts. CCM made significant strides within the Configuration Management area by rolling out the initial wave of the Configuration Management Database (CMDB). This is a federated platform designed to maintain real time infrastructure discovery within the enterprise. The CMDB allows for proper systems identification that ties change, incident, problem, and other enterprise management areas together that will serve to reduce the mean time to properly determine infrastructure dependencies.

CBP Call Center Connect Project: In August 2021, the contractor supporting the CBP's Call Center writ large went bankrupt leaving a multitude of CBP components without the ability to connect with the American public. As a result of this immediate need, OIT led the initiative and began collecting and coordinating requirements across CBP organizations. The team addressed the immediate need for platform engineering services to stand up an automated, cloud-based call center consisting of a robust workflow matching the legacy enterprise infrastructure capability to support CBPs critical operations. With two weeks to establish this new capability, the team worked an exceptional number of hours to meet the mission. The project was completed two days ahead of schedule and CBP is back to communicating effectively with the public and continuing its essential mission of facilitating trade and travel as America's front line.

Enterprise Monitoring: To reduce security vulnerabilities, the Enterprise System Monitoring and Enhancement (ESME) Team moved approximately 5,000 host agents to a new data platform for enterprise monitoring.



The previously used technology was not able to keep up with security updates, and as a result, CBP security scans constantly identified vulnerabilities. The solution to transition to technology provided by different vendors was successfully completed in April 2021.

Vendor/OGA Caused Incident Analysis and Accountability: In FY 2021, OIT investigated and analyzed the increasing number of significant incidents impacting CBP operations caused by our vendors and Other Government Agencies (OGA), and to use this information to identify areas of improvement. The analysis uncovered that external sources or events caused 44.25% of overall incidents in FY 2021. Of those incidents, vendors caused 37.01% and OGAs caused 60.22%. This analysis and the supporting data were used in executive level discussions with multiple vendors and agencies to highlight the impact to CBP and to discuss performance improvements.

High Value Systems and Applications: As part of the OIT Quarterly Performance Metrics Reporting, the Mean Time to Restore (MTTR) is calculated for incidents impacting our high-value trade, travel, and law enforcement applications. These systems and applications are mission critical for CBP and frequently make the news when problems arise. The overall average MTTR for FY 2021 was 1.43 hours, and we have not exceeded our target of staying under two hours in any quarter of FY 2021.

Technology Refresh

As part of the CBP network modernization effort, OIT continues to deploy new switches to replace end-of-life/end-of-support (EOL/EOS) switches at CBP field sites. This effort strives to bring the local area network (LAN) to current network standards and implement modernized capabilities to increase site resiliency, improve performance, and enhance security posture of the CBP field sites LAN. Since February 2019, OIT has installed a total of 1,899 switches.

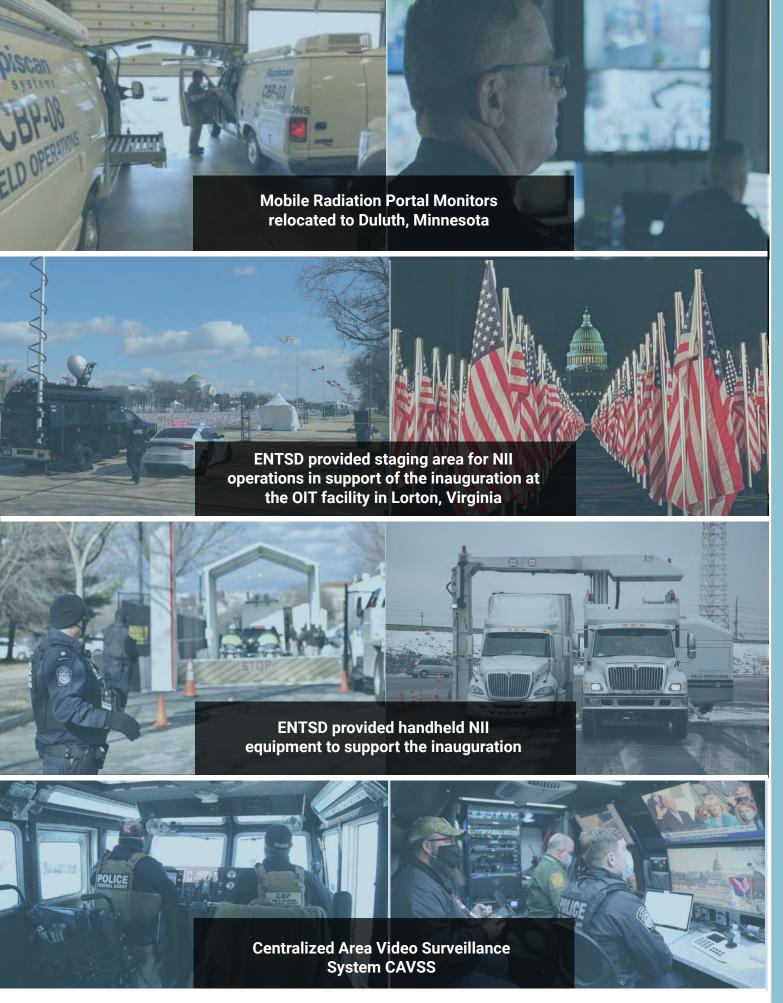
CBP implemented the interconnection point (ICP) solution to modernize the wide area network (WAN) and allow field sites to leverage multiple types of transports for WAN connectivity, thereby removing dependency on costly legacy circuits and minimizing reliance on the legacy network for operational restoration of services. As part of the effort. OIT increased the circuit bandwidth at field sites and upgraded network equipment to enhance network and application performance as well as facilitate implementation of video surveillance and real-time applications. The effort involves implementation of ICP Broadband circuits, implementation of backup 4G connectivity for resiliency, and conversion ethernet circuits at airports, POEs, and biometric sites to ICP circuits. Since the beginning of the project, OIT has implemented 806 ICP circuits across 662 CBP sites, with a total of 187 sites also possessing 4G cellular backup.

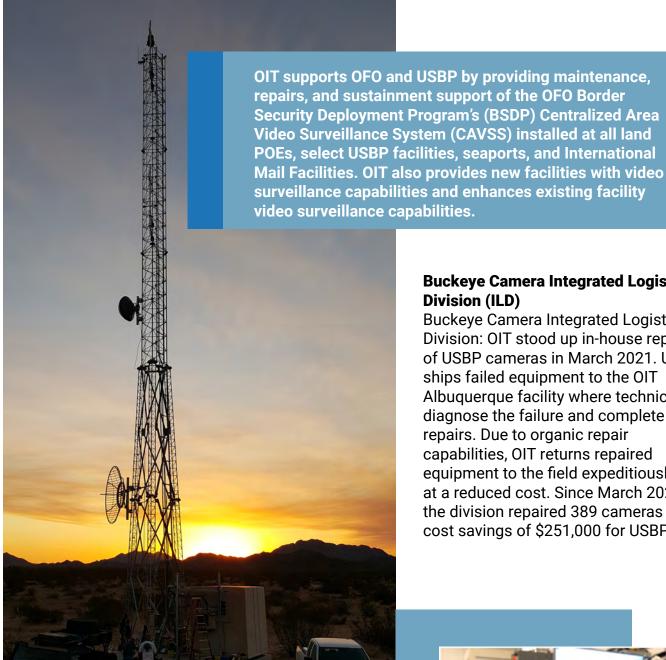




Non-Intrusive Inspection (NII)/Radiation Detection Systems (RDE) Upgrades

OIT provides project management support for service requests for Non-Intrusive Inspection (NII) and Radiation Detection (RDE) assets. These requests consist primarily of relocations, engineering changes and upgrades and support for special events such as the Super Bowl and the Presidential Inauguration. In the past year, the Integrated Logistics Division (ILD) supported 30 relocations, 24 engineer changes and upgrades, and six special events.





Buckeye Camera Integrated Logistics

Division (ILD)

Buckeye Camera Integrated Logistics Division: OIT stood up in-house repair of USBP cameras in March 2021. USBP ships failed equipment to the OIT Albuquerque facility where technicians diagnose the failure and complete repairs. Due to organic repair capabilities, OIT returns repaired equipment to the field expeditiously and at a reduced cost. Since March 2021, the division repaired 389 cameras at a cost savings of \$251,000 for USBP.

Land Mobile Radio Support

In FY 2021, OIT improved CBP's Land Mobile Radio (LMR) network resiliency by adding redundancy and scalability to minimize the customer-facing impact of common device failures and mitigate potential network outages. Resilience-enhancing projects include the System Upgrade Agreement (SUA) and Dynamic System Resiliency.





To provide a backup infrastructure for the Land Mobile Radio (LMR) Network, OIT added new equipment to over-the-air rekeying, traffic analysis and recording, and geo-positioning to automate the redundancy of tactical data communications. The new, fully redundant radio network routing, recording, tracking, and management infrastructure in Ashburn greatly improves disaster readiness and system survivability.

OIT enhanced interoperability and improved communications for agents and officers in the field. Key examples include:

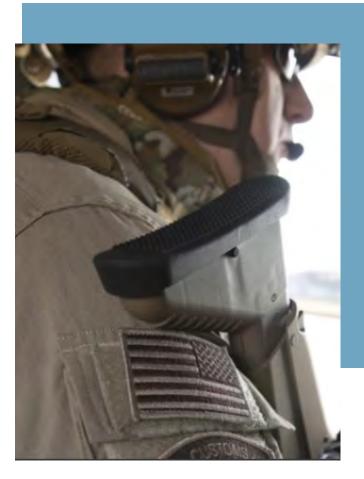
In Buffalo, OIT connected CBP's dispatch network to the radio systems of key state and local agencies in a secure and reliable manner, providing agents and officers with instant access to their partners in local law enforcement.

In California, OIT deployed a new network controller that improves dispatch resilience. The re-engineered radio network topology minimizes the effect of potential outages by partitioning San Diego's and El Centro's dispatch systems into two independent subsystems that can continue operations separately, even if connectivity is lost between them. Additionally, OIT is replacing and upgrading legacy radio equipment in 29 locations across Southern California, providing agents and officers with the latest technology, while improving network security, visibility, and resilience.

In three of six Air and Marine Operations facilities, OIT installed new tactical communications systems. The new systems allow each AMO Branch to communicate directly with dispatchers at the Air and Marine Operations Center (AMOC). Agents at these airfields now have access to all CBP's radio towers nationwide, enabling them to keep in touch with airborne agents further than ever before.

OIT replaced 300 end-of-life routers and 70 switches on the LMR network, significantly improving the connectivity, reliability, and security of mission critical border communications.

These investments in critical infrastructure helped OIT achieve 98% reliability for both the LMR network and the Customs Over-the-Horizon Enforcement Network (COTHEN), further enabling mission-critical communications in remote operating environments.



Tactical Radio Infrastructure: To improve system operability, OIT enabled "push to talk" capabilities on commercial wireless devices interfaced with existing tactical radio infrastructure. OIT continues to support Air and Marine Operations in providing communication interconnections between the CBP Land Mobile Radio (LMR) system and local Long-Term Evolution (LTE) systems.

OIT activated and integrated GPS into the Enterprise Geospatial Information Services application (eGIS) by adding 12,929 radios. These 10,345 mobile as well as 2,584 portables radios on the LMR network will enhance situational awareness and officer safety.

Mobile Device Support

Android Team Awareness Kit (ATAK): OIT created a Team Awareness Kit Federation (TAK FED) service for DHS. TAK FED is the first application that enables integration between all first responders within DHS. The TAK FED initiative supported the Presidential Inauguration ceremony on Wednesday, Jan. 20, 2021. OIT developed a solution for iTAK (TAK for Apple devices) that was pushed out to 120 officers who supported the 2021 Presidential Inauguration. In support of the Super Bowl, OIT created a TAK Federation server between CBP and the Federal Bureau of Investigation.

Federal Law Enforcement Training Center (FLETC)
Support: A custom tablet was configured that streamlined trainee onboarding by pre-registering students, simplifying identity access management, and remotely deploying essential learning applications. In FY 2021, The ENTSD Mobility team supported over 1400 trainee enrollments using the custom tablet configuration.

CBP Guest Wi-Fi Deployments for OFO Shared Devices: OIT implemented a guest Wi-Fi solution that allows existing CBP access points to be used securely while accessing the internet. This solution allows up to 24 Wireless LAN Controllers (WLC) to access the CBP Guest Wi-Fi network at one time. OFO requested that sites with shared mobile devices receive the CBP Guest Network to allow shared devices to connect to the CBP network. The original request for this service from OFO grew from 18 to 67 sites, beginning in December 2020.

Mobile Applications

OIT Mobility managed the installation of more than 650,000 applications on devices that are managed, internal, or purchased.

Devices Managed

OIT Mobility manages approximately 26,500 devices with an enterprise mobile management and security solution. The console manages 120 iOS and 45 Android device models.



IT SUPPORT

A DAY IN THE LIFE



24/7 year-round support



1200-2000 calls to the Technology Service Desk (TSD)



1000-1500 calls from internal CBP customers



200-500 calls from external Trade & Other Government Agency customers



250-500 requests to the TSD via email and self-service tickets.



950 tickets closed by Field Technology Officers



32,000 proactive database health checks performed



120k Land Mobile Radio subscribers supported



Over 12,000 network devices monitored

IT SUPPORT



DEVICES

87,000 end point devices

97,000 surveillance and detection assets

82,000 tactical communications assets (radios)

26,000 mobile devices (smartphones, tablets, etc.)

11,000 routers and switches



COMPUTING ENVIRONMENT

8000+ virtual servers and 922 physical servers

3 data centers

20+ Petabytes of storage

10 billion transactions daily

40 billion data exchanges daily

Nearly 20 million system messages

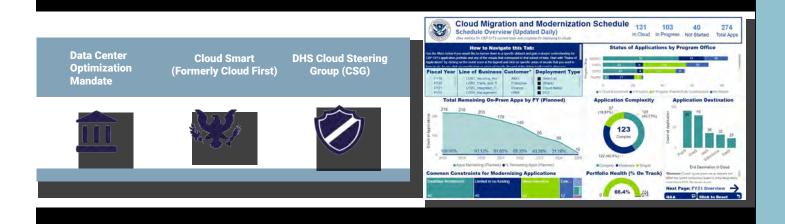
Largest data network in DHS

1500 CBP offices, 1700 WAN circuits

4 CBP controlled cloud environments



CLOUD MIGRATION



In FY 2021, OIT's data center and cloud program delivered key initiatives around security, resiliency, modernization, adoption, and development to enhance experiences across the enterprise. OIT successfully achieved an overall cloud migration score of 43% for the CBP OIT application portfolio. Several Federal Informational Security Act (FISMA) Common Control Packages were established, providing multiple OIT-wide benefits including reduced level of effort on security teams, consistent control implementation, reduced risk of control failures, and expedited Authority to Operate for new and existing systems migrating to the cloud.

Data Squad

The Data Squad delivers transformational data services such as the NextGen Data Management (NDM) Data Hub, a multi-model enterprise data platform that incorporates data management capabilities for a flexible, holistic, and efficient use. The enterprise data hub overcomes data silos by ingesting data of all types (structured, unstructured, geospatial, etc.) into a centralized location where the data can be easily manipulated for downstream analytics and secured through fine grain access controls. During FY 2021, the Data Squad obtained an Authority to Operate (ATO) for the NDM Data Hub.

HIGHLIGHTS

Data Squad accomplishments in FY 2021 include the following:

Migrated several billion rows of data (21 TB) in many dozens of tables to the NDM Data Hub in five weeks. The data hub allows for text semantic, graph, geospatial, temporal queries and more.

Partnership with the Office of Chief Counsel (OCC) led to satisfying an urgent request to identify documents meeting specific search criteria by creating a new efficient and effective eDiscovery process for ingesting and searching large volumes of documents. For this effort, the team successfully uploaded 1.2TB of disparate data in different formats (PDF documents, Excel sheets, PowerPoints, Word documents) into the NextGen Data Management (NDM) Data Hub. Using the Data Hub's robust search



Office Automation Productivity Suite

Cloud-based versions of productivity tools deliver faster, more reliable products that offer users real-time collaboration opportunities with their offices. As the desktop applications are hosted in the cloud, new features and enhancements to these applications will be seamlessly applied, and users will no longer need to download new applications or depend on periodic large-scale deployments from OIT. Highlights of FY 2021 enhancements include the following:

Enterprise Messaging Tool: Completed the enterprise retirement of the legacy messaging tool in April 2021. The new enterprise collaboration tools establish a central place to organize files, attend meetings, communicate, and collaborate. Users had no direct action to take as part of the upgrade.

File Storage Enhancements: Deployed the file storage sync client to all users and machines resulting in all users now seeing a cloud icon in the bottom right task bar on their workstations. These changes enable users to synchronize their content to their workstations so they can easily and securely access files anytime, even when offline. Initiated a pilot to migrate user F: Drive (Home Drive) file data to updated file storage solutions.

capabilities, the team quickly identified 1,330 matching documents. Through this process, the E-Discovery team saved at minimum one month's worth of time and now has a repeatable, scalable, and flexible solution to meet similar use cases in the future.

e-commerce, the volume of entry shipments has increased exponentially over the last several years. As a result of this spike, CBP has created Section 321 programs to enable the agency to monitor and protect against illegitimate trade while providing the public the benefits of duty-free shipments for qualified imports. The Data Squad consolidated data from two different systems and developed queries to pilot a system which identified potential section 321 violations with the following results:

Total number of ocean shipments in potential violation: **221,000**

Total value of ocean shipments in potential violation: **\$4M**

Total number of air shipments in potential violation: **249,000**

Total value of air shipments in potential violation: \$96M

Modernized the CBP Innovation (INVNT) team method of tracking projects to streamline data collection and reduce manual steps in the data ingestion process. In just four weeks, the team ingested and curated INVNT portfolio data to reduce data duplication, and developed a user friendly interface.

Expanded Analytics Tool Capability:

Implemented enhanced analytical tools which allow users to access enhanced features and capabilities and offer greater scale and performance for content. Upgraded analytic tool allows sharing of content and dashboards without purchasing a per-user license, leading to cost savings.



Group-Based Licensing: Implemented group-based account licensing for CBP which improves efficiency and allows administrators to "bundle" specific licenses assigned to all users and add users to a group membership. Furthermore, it streamlines license policy updates, applies changes at the group level rather than on individual user accounts and easily targets specific groups for different

Office automation Productivity Suite Phone:

Identified and processed users related to the Ashburn move, transitioning them from the legacy phone system to Office Automation Productivity Suite voice solution.

Call Quality Process:

Implemented the tools and processes to analyze information



about Office Automation Productivity Suite calls and meetings for each user in the CBP enterprise to help find and troubleshoot call-quality problems that are experienced during ongoing operations. OIT now uses a Call Quality Dashboard (CQD) with a near-real-time data feed. Call records are available in CQD within 30 minutes of the end of a call providing a summary and detailed reports that meet most needs with drill-down filtering available.





MISSION TRUSTED PARTNERSHIP INITIATIVE

CBP OIT has successfully formulated and led implementation of a Trusted Partnership Initiative (TPI) across five fronts: all CBP, DHS, other U.S. government agencies, Industry/Trade partners, and international agencies/partners/countries. CBP's TPI program strategically and tactically facilitated IT to operate at the speed of mission, by enabling teams to work across organizational lines seamlessly, digitally, reliably, and securely.



HIGHLIGHTS



Worked with DHS partners to process largest Southwest Border surge (1.9M encounters) and through partnership with DOD, HHS, DOS, DHS, and WH/OMB, supported Operation Allies Welcome and the successful processing of 83,000 evacuees from Afghanistan.



Coordinated with 98 countries to improve national security and travel for all incoming international passengers to the US (60M). Established a technology roadmap with "five-eye" countries in the Border 5/Migration 5 (B5M5) CIO Tech Forum for border security technology and Touchless Borders of the Future.



60 engagements with 20 internal CBP partners resulted in vastly improved mission reliability and security.

TRUSTED PARTNERSHIP

TRUSTED PARTNER INITIATIVE

OIT TRUSTED PARTNERSHIP OVERVIEW AC BHAGOWALIA



The Trusted Partnership engagement strategically supports CBP mission success. Regular interactions provide insight, transparency, and collaboration on Office of Public Affairs mission needs and resource allocation to support mission success.



As a Trusted Partner, how can OIT best support a relationship with the OPA team resulting in mission success?

PARTNERSHIP OBJECTIVES



Integration & Transparency Increase IT initiative integration and transparency within CBP mission offices and enterprise support organizations



Linkage and visibility into other mission stakeholder projects



Emerging technology needs



Governance Establish CBP IT governance structure with Mission Offices to meet agency and DHS guidance



Cybersecurity and ongoing system maintenance



IT acquisition support



Data-Driven Decision Making Meet with IT stakeholders

on a regular basis to provide business intelligence insights and optimize resource allocation



Availability and access to key mission data



Project schedule and cost transparency

What would you like to see continue as we move forward with our partnership? OIT is here to support and serve you to meet mission needs.

CBP's Trusted Partnership Initiative (TPI) program strategically and tactically facilitates IT to operate at the speed of mission, by enabling teams to work across organizational lines seamlessly, digitally, reliably, and securely. Through regular engagement, TPI meetings successfully increase partner/ component driven conversations and lead to more efficient and data-driven decision-making to meet the current needs of a vast and wide-ranging mission, as well as facilitate discussions for possible future requirements and allow for delivery of scalable solutions.

During FY 2021, the TPI effort expanded beyond the 20 internal CBP partners to also include DHS, other U.S. government agencies, industry/ trade partners, and international agencies/ partners/ countries.



The expansion to include five mission stakeholders at a global scale yielded top results by working "smarter and not just harder" through innovative technology, process, transparency, interagency coalitions, and accountability. TPI has developed into a highly valued program that showcases OIT's commitment to collaboration with trusted partners to support the CBP mission.

Internal CBP Partnership

OIT conducted over 60 meetings with twenty internal CBP partners and identified 100+ action items. These collaborations resulted in the introduction of new technology to provide enterprise solutions and vastly improved mission reliability and security. Accountability and transparency are keys to the success of TPI. Relentless follow through on action items solidifies trusted partner confidence in OIT's services and stewardship of mission capabilities. Through TPI, OIT leaders strengthened communications with counterparts in CBP and DHS and delivered efficient IT services in a timely manner.

OIT has collaborated with trusted partners in a variety of areas such as Robotic Process Automation (RPA) and Artificial Intelligence (AI) initiatives, Cybersecurity awareness and communication, and extensive dashboards to provide CBP leadership with real-time information at their fingertips. OIT further expanded TPI by initiating visits with CBP field offices to EI Paso and San Diego, providing CBP IT leadership with an operational overview of the technology supporting the Southwest Border.



"OIT is best in the business hands down!"

- Former OFO EAC William A. Ferrara



Through first-hand observation and in-depth discussions, these visits helped identify opportunities for IT improvements, innovation, and collaboration in support of shared mission priorities.

TPI has implemented a variety of tools to further aid partners and provide transparent information. Dashboards tailored to each Trusted Partner provide a level of transparency through easily digestible live data that is always available at partner's fingertips. Information sharing sites provide specific centralized resources for partners specific to their interests and unique mission needs. OIT stood up a CBP IT Governance Council (ITGC) that meets monthly with Trusted Partners to discuss enterprise-wide technology governance. The ITGC added a bi-monthly Deep Dive session with each of the Trusted Partners to focus on their respective areas of responsibility with regards to IT governance.

DHS Partnership

Working with DHS partners, CBP OIT supported the largest surge in migrants, 1.9M encounters, at the Southwest Border. Extensive updates were made to various systems and facilities to allow for collaboration with our DHS counterparts to address the Migration Protection Protocols (MPP) and related processing at the border. The Cybersecurity team worked closely with Cybersecurity and Infrastructure Security Agency (CISA) to mitigate the impact of hacking attempts and other attacks against CBP's systems and infrastructure. Partners from the DHS Office of the Chief Information Officer (OCIO), Immigration and Customs Enforcement (ICE) and U.S. Citizenship and Immigration Services (USCIS) were included on OIT's "Tour of Modernizing Technology" field visits to enhance collaboration in support of shared DHS mission priorities. Visits were made to El Paso in May 2021 and San Diego in July 2021. The collaboration with the DHS OCIO has provided a platform for crosscollaboration amongst sister agencies and opportunity for growth within current and emerging programs through building knowledge on CBP operations.



AC Bhagowalia participates in and provides a cadre of OIT Senior Executives as subject matter experts in the weekly Southwest Border Technology Meeting that includes CIOs from within the sister-agencies of DHS. The focus is to collaborate on current efforts to increase operational processing times, technology modernization funding and overall conceptualizing comprehensively on actions to better the operators' mission by way of technology. DHS and CBP meet weekly to discuss change

requests, outages, and to detect root causes of problems which will identify preventive actions in the future, actively supporting the DHS CIO six strategic objectives.



U.S. Government Partnership

In addition to our DHS partners, OIT also collaborated with other U.S. government agency partners to support the migrant surge at the Southwest Border. Working with the Department of Health and Human Services (HHS), OIT provided support to enable HHS to access their systems at CBP sites and provided HHS' Office of Refugee Resettlement (ORR) the ability to input and receive data from HHS ORR via the Unified Immigration Portal (UIP).

Operation Allies Refuge (OAR) and Operation Allies Welcome (OAW) required close partnership between components of the U.S. government. Working with the Department of Defense (DOD), Department of State (DOS), the White House, Office of Management and Budget (OMB) and DHS, CBP OIT provided critical infrastructure to support the airlift and processing of 83K evacuees from Afghanistan.



Industry Partnership

OIT supported over 163K active trade community users, comprised of importers, brokers, carriers, exporters, and sureties, with \$4 trillion in imports/exports. The public facing ACE Availability Dashboard was established to enable an improved outreach and transparent partnership between CBP and the trade community and provided the trade community (importers, filers and public) with a faster real time and expanded view of the ACE and Automated Commercial System (ACS) applications. The dashboard provides increased timely and accurate ACE application status data, system maintenance event scheduling and details and historical system availability information.

OIT provided support for all major meetings with the international trade community to include the Virtual Trade Symposium, quarterly meetings with the National Customs Brokers and Freight Forwarders Association, Trade Support Network, and the Commercial Operations Advisory Council (COAC). Optimizing Robotic Process Automation (RPA), OIT worked with partners to streamline workflows enabling a more profitable, flexible, and responsive functionality within ACE, CTPAT and ATAP. RPA technology enhancements enables a noninvasive, rapid, and accelerated digital transformation reducing human error and automating workflows saving money and time for the trade community and CBP.

International Partnership

CBP OIT coordinated with 98 countries to improve national security and travel for all incoming international passengers to the U.S. The Biometric Data Sharing Program (BDSP) continues to advance in Mexico and Central America. The Automated Targeting System -Global (ATS-G) is currently deployed in 30 countries. CBP OIT represents the U.S. and participates in a series of deep dives with partner countries to compare best practices on trade, traveler facilitation, contraband detection, and cybersecurity. Participation with the Association of Southeast Asian Nations (ASEAN) presidential initiative by supporting the ASEAN "Single Window" to foster the global development of interoperable "Single Window" systems to facilitate lawful trade across the Pacific and adopt international best practices in customs technology.



CBP BORDER 5/MIGRATION 5

MIGRATION5 Security · Service · Savings *** BORDER5

The Border 5/Migration 5 is a partnership between the Five Eye countries (AUS, CA, NZ, UK, and the US) designed to enhance international cooperation and coordination between member states in the realm of border security. The CBP Border 5/Migration 5 CIO Tech Forum is a subsection of the overall B5/M5 engagement focused on technology related to border security and immigration. AC Bhagowalia serves as the head of the U.S. delegation to the forum.

OIT produced the Technology Strategy FY2020-FY2024 document to guide the B5/M5 CIO Tech Forum's efforts to provide scalable, efficient, cost-effective technology that enables continuous and secure access to data across the Five. The forum will continue to work together to develop a Five Eyes Technology Collaboration Strategy to leverage each other's investments, develop fit-for-purpose emerging technologies, and

build in information sharing capabilities rather than bolting on after implementation on the six technologies identified in the Vision, including digitalization, artificial intelligence and machine learning, biometrics, data analytics, augmented and virtual reality, and distributed ledger (blockchain) technology.

This strategy is guided by the Five Country Ministerial (FCM)-endorsed Border of the Future Strategic Plan which calls for the Five to implement a Touchless

Border by 2030, ensuring a seamless traveler continuum among the Five. This strategy

Management

Data and

Privacy

Touchless

Borders

document identifies emerging technologies that countries can leverage in their pursuit of a Touchless Border, establishes common

standards to
facilitate better
data-sharing and
systems integration, and
pinpoints key trends,
threats, and common
resolutions the
information and

technology offices of each border and migration agency of the Five will face over the coming years. While this plan will guide the Tech Forum's efforts and help prioritize resolutions, it is also broad enough to enable the international body to address new opportunities and challenges as they arise, like the secure sharing of information and a joint approach to the Five's collective response to the COVID-19 global pandemic.

The CIO Tech Forum also created the Single Window Working Group (SWWG) to focus on harmonizing data sets to create a "single window" through which partner countries can view each other's immigration and customs data sets. Cargo Systems Program Directorate serves as the lead on U.S. engagement with the SWWG. The SWWG agreed to focus on COVID-19 related products of interest, such as medical supplies,

cleaning and disinfectant products, personal care products, and personal protective equipment. The group also agreed to leverage the reference list of COVID-19 commodities jointly prepared and maintained by the World Customs Organization (WCO) and the World Health Organization (WHO). Utilizing the WCO/WHO list made certain that while aligning with each other, the B5 would also align to the world standard. By focusing on the components of data sharing for a small group of data, the SWWG was able to determine the overall feasibility of sharing harmonized data for

commodities between the Five. The group's analysis Known to One, has Known to All proven it is feasible to exchange import and export data for the commodities using common HS codes **Harnessing** between the Five by **Emerging** utilizing the international Technology standard as a base.

providing a mapping

reference, and identifying

common procedures.

Border Technology Deep Dive Series: The U.S. participated in the New Zealand hosted, 90-minute-deep dive series, to provide briefs on approaches to vaccine certification for arriving passengers, new developments in technology to enhance traveler facilitation and reduce wait times, contemporary cybersecurity concerns like the growing threat posed by ransomware attacks, and trade facilitation. The deep dives give each partner country an opportunity to share its approach and outlook in different fields of technology. During the deep dives, each partner country provided a 10-minute brief on its efforts in whatever given field the deep dive was scheduled to explore, followed by discussion.







MISSION CYBERSECURITY

OIT Cybersecurity is responsible for enhancing U.S. Customs and Border Protection's cybersecurity posture by proactively managing cyber risks; coordinating cyber information sharing; and providing an agile, effective, and cost-efficient approach to cybersecurity that aligns to the evolving cyber threat environment.



HIGHLIGHTS



Implemented over 300 DHS Insider Threat Operations Center (ITOC) supplied indicators onto CBP's 82,740 unclassified systems.



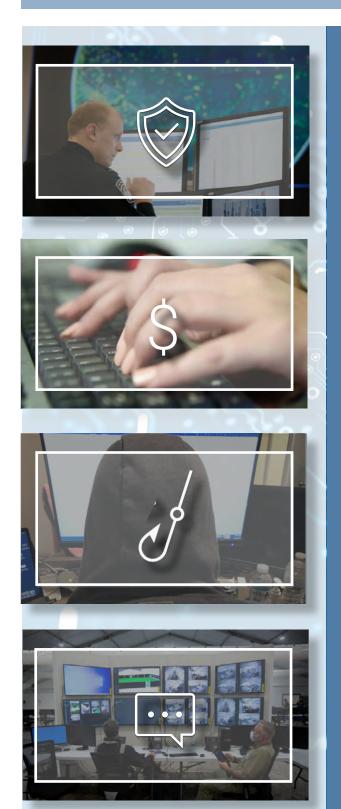
Established the Cyber Threat Hunting program which has proactively identified and resolved 16 Significant Findings, 40 Observations, and 32 Recommendations for 2021.



98% reduction in Financial Systems Audit (FSA) Notices of Findings and Recomendations leading to DHS's clean audit opinion. This was our best FSA results ever with zero IT findings!

MISSION CYBERSECURITY

CYBERSECURITY



Security and Technology Policy: During FY 2020, OIT accredited 49 major applications and general support systems, admitted 13 systems into its Ongoing Authorization program, signed 11 international Interconnection Security Agreements, and completed 92 domestic interconnection security agreements.

Financial Audits: The OIT Audit Liaison Team successfully completed the FY 2020 Financial Statement Audit virtually during the pandemic and will do the same for FY 2021. OIT won the DHS CFO FY 2020 Awards for Excellence in recognition of OIT's CBP-wide collaboration efforts to significantly reduce its Notice of Findings and Recommendations in support of sustaining DHS's clean audit opinion. CBP/ES/OIT went from 42 audit findings in FY 2015 to only one audit finding in FY 2020. To date there are no identified NFRs for FY 2021.

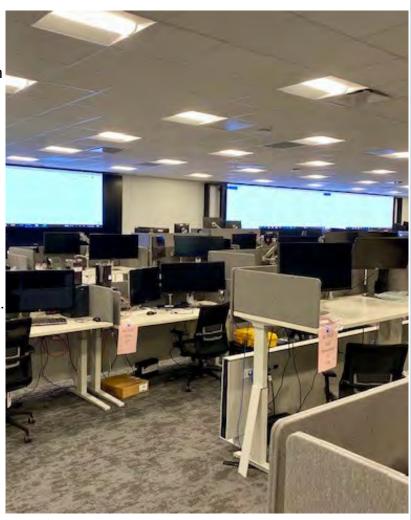
CBP Phishing Campaigns: OIT executed quarterly successful mock phishing campaigns to promote security awareness and vigilance against cyber-attacks. The campaigns include two General User campaigns and four Privileged User campaigns, in full compliance with USM mandates for DHS components.

CBP-wide Accessibility and Compliance with Section 508: During FY 2021, the CBP Section 508
Team held 12 awareness outreach events throughout the CBP community and doubled the number of DHS OAST Trusted Testers (Version 5) within the enterprise.

Security Operations: On Dec. 14, 2020, OIT responded to CISA Emergency Directive 21-01 pertaining to a sophisticated supply chain cyber-attack against SolarWinds Orion products, impacting more than 300,000 clients globally. With our CISA and DHS partners, and thorough analysis of CBP's SolarWinds infrastructure, OIT isolated affected software versions to air-gapped systems. OIT conducted thorough forensics analysis of network traffic and affected hosts which resulted in zero evidence of stage 2 adversarial activity. CBP's cybersecurity controls and technical mitigations ultimately prevented compromise, shielding CBP from this attack.

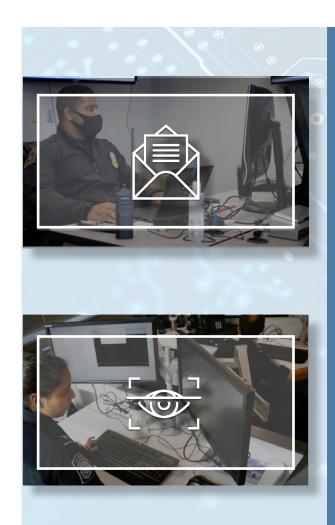
In coordination with the CBP Office of Intelligence (OI) and the Office of Professional Responsibility (OPR), the CBP SOC lead Office of Information and Technology (OIT) Cybersecurity Directorate efforts to implement over 300 DHS Insider Threat Operations Center (ITOC) supplied indicators onto CBP's 82,740 unclassified systems. This initiative also led to a successful ES nomination for The Commissioner's (C1) annual award.





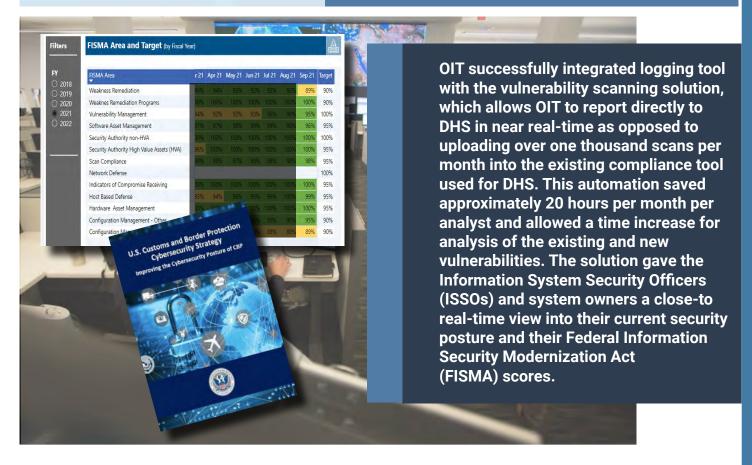
Threat Detection & Prevention: CSD completed the Mitre ATT&CK Framework project, identifying Enterprise detection and prevention gaps against adversary tactics, techniques, and procedures (TTPs). The output of the project was captured in a report, prioritizing prevention and detection gaps by risk of exploitation and system criticality. These efforts ultimately resulted in enhanced visibility into the security posture of CBP high value assets and mission essential systems.

Threat Prioritization: Developed methodology to identify top 5 cyber threats to CBP, building processes around this intelligence to enhance detection and prevention capabilities through correlation alert development, indicators of compromise (IOC) sharing, vulnerability management, and HVA monitoring against adversary tactics. This intelligence is also utilized to assess and prioritize Mitre ATT&CK gap analysis findings. This methodology puts a laser focus on actor sophistication, capabilities, target sectors, intent, and recent activity.

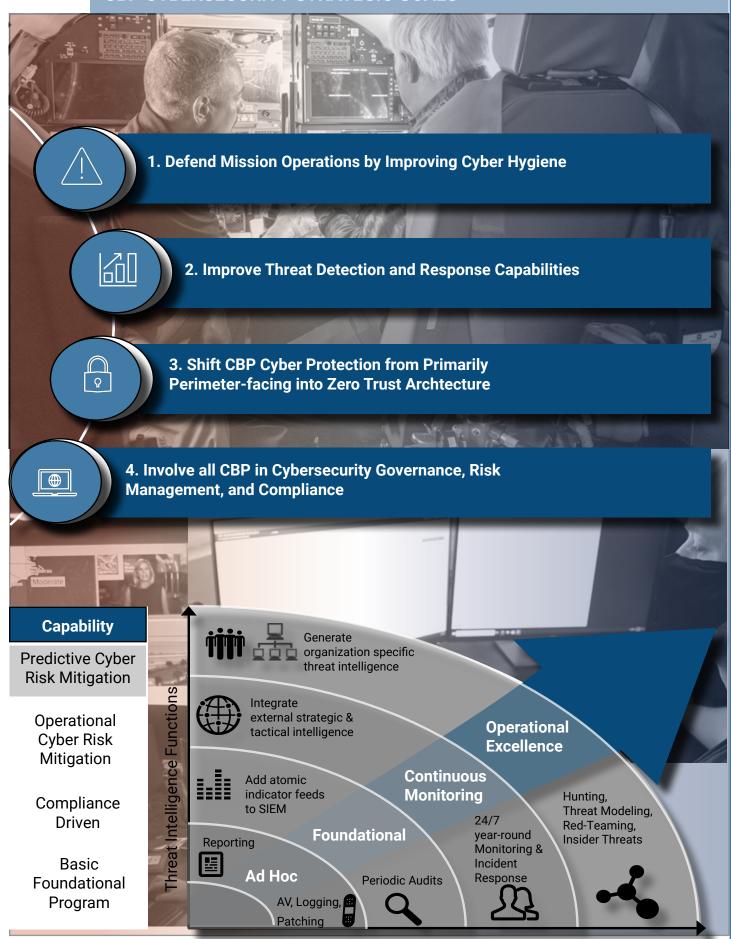


Email Security: CBP Security Operations led the roll out of PhishAlarm to Microsoft Outlook clients across the CBP user base. This capability enables users to report suspected phishing emails to the CBP SOC with the simple click of a button. PhishAlarm also categorizes each email as either malicious, suspicious, bulk, spam, and low risk using a threat scoring algorithm. This allows for a more targeted response from the CBP SOC to focus on high-risk emails. Since its inception, over 2,000 suspected phishing emails have been reported by CBP users each week.

Threat Hunting: CBP established its first Cyber Threat Hunting program. Under this program, threat hunters proactively hunt for potential malicious activity or indicators of compromise across CBP systems and networks. These efforts consist of scheduled hunts against different technology types, looking for signs of adversarial tactics and techniques that have been identified in cyber intelligence reporting. This program revealed security configuration and policy gaps across critical CBP systems that would not have been detected by conventional tools. Each hunt yields prioritized findings and mitigation recommendations allowing for continuous bolstering of CBP security posture.



CBP CYBERSECURITY STRATEGIC GOALS







MISSION ENTERPRISE IT GOVERNANCE

Drives enterprise-wide efficiencies, CBP and DHS strategy, and statutory compliance.



HIGHLIGHTS



The IT Executive Dashboard has been deployed to aid decision-making through improved data transparency, access, and automation.



RIM conducted records retention analyses for 161 Privacy Threshold Analyses, 18 scheduling initiatives for 12 CBP Offices, and analyzed 13+ CBP communications platforms.

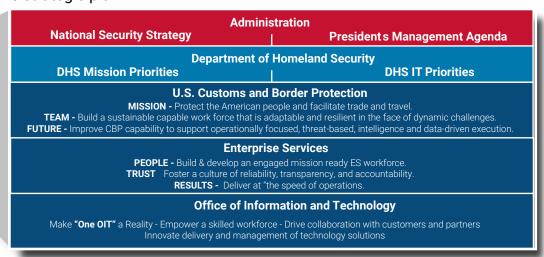


Established the IT Governance Council (ITGC) to oversee the CBP's entire enterprise Information Technology/Information Resource Management (IT/IRM) Portfolio of 73 investments, 179 Systems, 245 Projects, and 26 High Value Assets.

ENTERPRISE IT GOVERNANCE

OIT PLANNING ALIGNMENT AND SUPPORT OF THE CBP STRATEGY

OIT supported CBP strategic planning and ongoing tracking of the 5 Enduring Mission Priorities and 12 strategic objectives, as well as Enterprise Services Strategy development in alignment with the OIT 2019 – 2022 Strategic Plan. Included in this effort was development and support of the Commissioner's Strategy Dashboard, a source of information for CBP senior leadership to manage and govern our strategy in alignment with mission operations. The strategy dashboard aligns Enduring Mission Priorities and Strategic Objectives to create a consolidated line of sight management platform that provides an accountable and easily consumable view of CBP's strategic plan.





MISSION

ENDURING MISSION PRIORITIES

STRATEGY OBJECTIVES

CORE VALUES



CBP IT EXECUTIVE DASHBOARD

The CBP Information Technology Executive Dashboard is an enterprise-wide transparent single source of information for OIT leadership to manage and govern OIT's strategy and program management implementation in alignment with mission operations. This dashboard has links to multiple dashboards and presentations across OIT programs to create a collective management platform that provides an easily consumable view of OIT's performance. The IT Executive Dashboard enables leaders to make informed decisions at the right time in the management of IT, facilitate rapid responses to inquiries, and increase situational awareness to meet evolving mission priorities.



Service Now Incidents and Requests - Last 12 Month

All CBP Offices



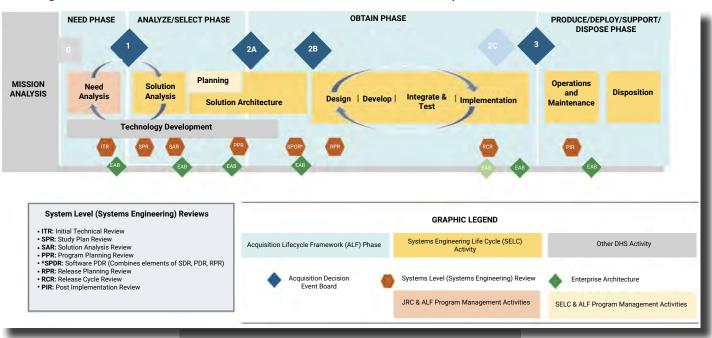
The CBP IT Executive Dashboard is deployed and in full operation. OIT continues to improve the performance and user experience to increase the adoption and use of the dashboard throughout the enterprise. The goal is to improve data storage and retrieval for decision support, ensure timeliness, relevance, and accuracy of the data, and automate data driven decision making.

Program Acquisition, Systems Engineering, and Enterprise Architecture Reviews

The CIO is designated as the Lead Technical Authority (LTA) for acquisition programs that contain Information Technology. The LTA advises the Component Acquisition Executive (CAE) on Acquisition Decision Events (ADEs), is a voting member of System Engineering Life Cycle (SELC) reviews, and oversees the CBP Enterprise Architecture Decision (EAD) reviews.

In FY 2021, the LTA participated in 9 ADE reviews, 17 SELC reviews, and 7 EA reviews for such programs as Non-Intrusive Inspection – Integration (NII-I), Small Unmanned Aircraft System (SUAS), Unified Immigration Portal (UIP), Biometric Entry/Exit (BE/E), Border Enforcement Coordination Network (BECN), and Integrated Surveillance Towers (IST), among others.

The CTO office also reviews the acquisition-related documents produced by programs as part of their progress through the acquisition lifecycle. These documents include the Analysis of Alternatives Study Plan, Life Cycle Cost Estimate (LCCE), the Concept of Operations (CONOPS), Integrated Logistic Support Plan (ILSP), Program Management Plan (PMP), Systems Engineering Plan (SEP), Test and Evaluation Master Plan (TEMP), and others. In FY 2021, the CTO office reviewed and provided comments on 196 documents spanning 47 separate programs. These reviews serve to provide executive-level oversight of major acquisition programs, reduce risk, and ensure technology is being applied in accordance with the CIO's vision for the future state of the enterprise.



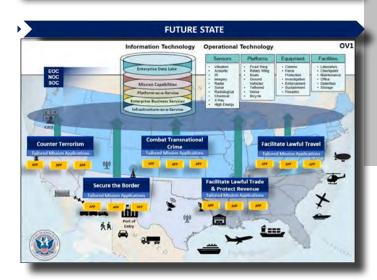
The Acquisition Lifecycle Framework & Systems Engineering Life Cycle consists of a series of programmatic and technical reviews conducted throughout an acquisition program's lifecycle. For an iterative software development program utilizing Agile Development techniques, there are four Acquisition Decision Events, eight Systems Engineering Reviews, and six Enterprise Architecture Reviews. The CIO, as the Lead Technical Authority, supported by the CTO and staff, participate in all of these reviews for each active acquisition program.

Dashboards

The CTO has developed and published a number of dashboards that enable executives to quickly identify and assess the progress of the various initiatives being conducted by the office. Such dashboards include the CTO Taskings Dashboard, which provides a real-time status on the assignments given to the CTO office, the CTO Contract Dashboard, which provides the CTO with a snapshot of the funding and contracts available, and the Cost Wise Readiness dashboard, which reports on the readiness and the cost of programs within CBP.







Enterprise Architecture is a discipline for proactively and holistically leading enterprise responses to disruptive forces by identifying and analyzing the execution of change toward desired business vision and outcomes. The CBP EA program is leading the charge to transform CBP's IT enterprise from an organizationallyfocused set of stovepiped systems into a mission-driven information delivery system. Today, each Mission Office develops its own IT systems, end-to-end. In the future, Mission Offices will be able to focus on their business processes, their data, and their end-user experience, with everything else, from networks, hosting, and cybersecurity to identity management, geospatial data, business continuity, and artificial intelligence and machine learning provided by OIT as enterprise services. This future state will lead to faster deployment of new capabilities, greater resiliency, increased capacity, and lower overall costs.

Portfolio Acquisition Executive

CBP's investments are managed in portfolios, aligned to the four Mission Offices, as well as Operations Support and Enterprise Services. Each office has a designated Portfolio Acquisition Executive (PAE) with oversight responsibility for the investments in his or her portfolio. In this arrangement, CBP's enterprise IT investments, including the IT infrastructure, were managed by an executive outside of OIT. In FY 2021, OIT prevailed upon the CBP leadership to establish the seventh PAE within OIT. This executive now has direct responsibility to oversee OIT's portfolio of enterprise IT investments, placing the authority to manage them under the CIO where it belongs.

OIT PAE Portfolio

IT Management Network Standard Investment Data Center and Cloud IT End User IT Security and Compliance **Application Platform** Advanced Passenger Information System **Automated Targeting System** TECS-Modernization (TECS-Mod) Passenger Enforcement Systems Primary Application Maintenance Seized Asset and Case Tracking System Bia Pipe Unified Immigration Portal Firearms Armor Credential Tracking System Asset Management - Remedy Information Resource Center Situation Management System (WebEOC) Web Communications and Research - CBP Operations+

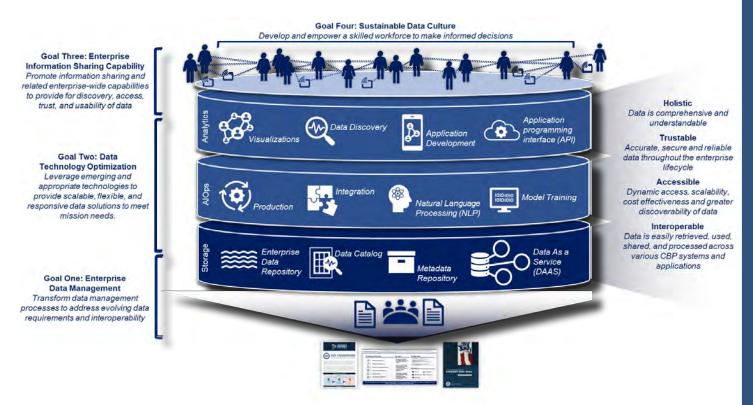


The Technical Reference Architecture (TRA) is CBP's first-ever model of the conceptual enterprise IT technology stack. The TRA establishes a common set of preferred tools and solutions for every aspect of software development, operations, security, and infrastructure. By establishing a taxonomy of 5 major areas, nearly 60 categories, and over 175 sub-categories, program managers, systems engineers, and developers can quickly identify the preferred CBP enterprise solution to meet their requirements. The TRA promotes common solutions, reuse of existing assets, standardization, and cross-organizational integration, enabling OIT's program offices to deliver better mission solutions, faster, more economically, and more securely than ever before.



U.S. CUSTOMS AND BORDER PROTECTION DATA STRATEGY

CBP Data Strategy



Over the past few months OIT has led an effort to collaboratively develop the data strategy for U.S. Customs and Border Protection (CBP). CBP data is a strategic asset for the U.S. federal government and foundational to CBP's operations, decisions, systems, and overall mission. While data is critical to the success of our mission today, our vision is to evolve CBP into a data-centric organization where data is employed for every operation and decision to gain critical mission insight and enhance delivery, and the use of emerging technologies are effectively, responsibly, and ethically leveraged by all staff. The CBP Data Strategy outlines four goals in the journey to accomplish this vision:

Enterprise Data Management

Transform data management processes to address evolving data requirements and interoperability.

Data Technology Optimization

Leverage emerging and appropriate technologies to provide scalable, flexible, and responsive data solutions to meet mission needs.

Enterprise Information Sharing Capability

Promote information sharing and related enterprise-wide capabilities to provide for discovery, access, trust, and usability of data.

Sustainable Data Culture

Develop and empower a skilled workforce to make informed decisions.



RECORDS INFORMATION MANAGEMENT

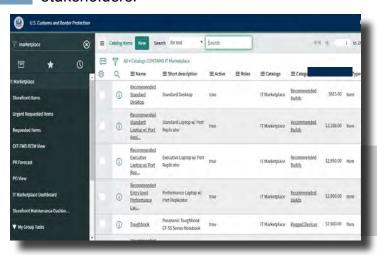
CBP Records and Information Management (RIM) Program provides policy, oversight, guidance, processes, training, and tools that enable CBP to govern and use information as a strategic resource to successfully safeguard America's borders and facilitate legitimate trade and travel. CBP RIM supports records management compliance in all 30 CBP component offices.

RIM Self-Evaluation: The RIM team developed individual component office scorecards and consolidated FY 2020 responses from all component offices into the first CBP-wide RIM Maturity Report, providing the Component Offices clear assessment of their RIM maturity for the first time. These assessments build the foundation for their improvement plans.

Essential Records: CBP RIM integrated with the CBP Continuity of Operations process, ensuring Essential Records are available to support CBP in the event of an emergency.

Retention Reviews/Records Scheduling:

CBP RIM conducted records retention reviews that provided clear guidance on legal retention and disposition of CBP records in business programs and IT systems. These reviews reduce storage costs and accessibility concerns and address equities of the Privacy Directorate, Office of Chief Counsel, and other stakeholders.





In FY 2021, CBP's Records and Information Management Program was recognized by the National Archives and Records Administration as a low-risk program.

RIM HIGHLIGHTS:

- Closed 2 Inspection Report
 Recommendations, for a total of
 13 of 16 recommendations closed.
- Presented 18 focus training sessions to 1220 attendees and increased total trainings by 44%.
- Completed CBP's first annual RIM Self-Evaluation with all 29 Component Offices.
- Provided retention reviews for 161
 Privacy Threshold Analysis
 Documents and advanced 18
 scheduling initiatives, and analyzed
 13+ CBP communications
 platforms.

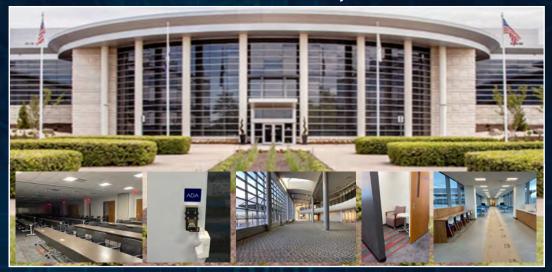
IT Marketplace: CBP organizations leveraged the IT Marketplace, resulting in reduced cost per workstation, reduced complexity of the desktop environment, reduced Cybersecurity risks, and reduced procurement actions.





CIO BUSINESS OPERATIONS

Develops our workforce to grow and work together as a team and partners with the CBP community.



HIGHLIGHTS



Facilitated the relocation from 11 offices into a consolidated facility in Ashburn VA.



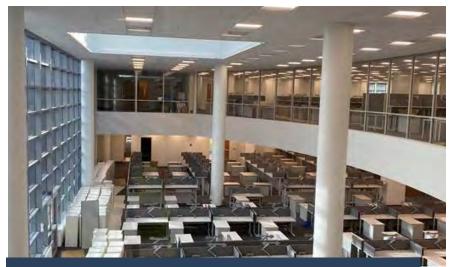
OIT employees were recognized with ten prestigious awards for exemplary team achievement including three CBP Commissioner Awards, three Enterprise Services Quarterly Awards, the TBM Council Public Sector Award (2nd Federal Agency in history), and three Industry Awards (Government CIO of Year, Golden Government Executive of Year, and Best Bosses in Federal IT).



Launched four workforce experience initiatives to recognize and support our people: Fostering Growth and Development, Recognizing OIT Values in Action, OIT Rotation Program, and Resilience Matters.

CIO BUSINESS OPERATIONS

ASHBURN/REINTEGRATION



The 2nd and 3rd floor of the Red tower in Ashburn.

REMEMBERING THE TRAGEDY ON

9/11

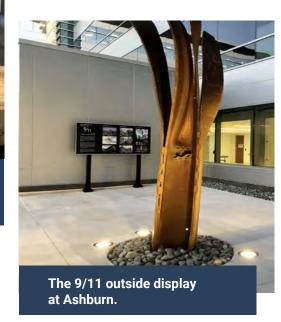
AT THE PENTAGON

This gives of Joseph for facility receiving the person of the p

The 9/11 Ashburn Memorial. This display captures pictures of the original site, post attack and the current site.

CBP OIT completed the move out of nine buildings into three buildings. CBP OIT locations remaining are located in Ashburn, Springfield and Lorton, Virginia. With construction and outfitting of the Ashburn facility largely completed, the Security Team and the PIV office were among the first to move into their new Ashburn home.

An interdisciplinary team within CBP created content for two inspirational lobbies at the Ashburn facility and an outdoor display depicting the events of 9/11 that resulted in the creation of both the Department of Homeland Security and U.S. Customs and Border Protection. OIT leadership is excited to embark on a new style of work at the Ashburn as the facility is open concept and will inspire a highly collaborative work environment in support of the CBP mission.



OIT employees won three significant awards in FY 2021 as follows:

The Technology Business Management (TBM) Council awarded CBP with the Public Sector Excellence Award for 2021 thanks to the outstanding work of OIT's Financial Management Division (FMD). CBP was only the third agency to receive an award from the TBM Council since its founding in 2012, and it chose CBP from a pool of three finalists - a first in the Council awards' history. The TBM Council specifically mentioned "the great story" CBP has to tell and how appreciative they were to hear it. TBM is an IT management framework and official Federal CIO/CFO policy that standardizes categorization of IT costs, technologies, resources, applications, and services, and aligns costs to IT services to improve delivery and efficiency. OIT FMD has implemented TBM to mature IT financial management capability to better understand and manage costs, communicate IT spending to customers, and find flexibility within OIT's budget to fund critical priorities such as cloud migration, network modernization, and technology refresh.

Aviation Contact Tracing Team -

OIT provided outstanding support to the National Targeting Center (NTC) and the Centers for Disease Control and Prevention (CDC) to identify travelers from restricted countries, enabling safe and traceable travel from COVID affected areas. To support CDC contact tracing efforts, OIT utilized CBP data holdings to provide contact information for COVID impacted travelers to CDC via an automated interface, enabled within 2 days of the first EO, and extended the data provided to include additional countries as travel restrictions expanded.

CFO award -

As a result of CBP's OIT audit remediation efforts, the external auditors deemed CBP as the first DHS component to have effective Information Technology General Controls (ITGCs). Effective ITGCs are necessary to create the foundation for the operation of application controls which directly relate to specific IT applications and ensure completeness, accuracy, validity, confidentiality, and availability of data.





OIT 's work and accomplishments throughout FY 2021 were recognized through a number of awards and recognitions including the below:



Service Awards:

In FY 2021, OIT had 18 employees celebrate 35 years or more of service.

5 years: 32 employees30 years: 18 employees10 years: 263 employees35 years: 11 employees15 years: 64 employees40 years: 4 employees20 years: 30 employees45 years: 1 employee25 years: 11 employees50 years: 2 employees



OIT's Advanced Analytics Intelligence Section received two awards. The team was recognized for its operational and analytical support in furtherance of investigations for two named operations combating trafficking of illegal firearms between the U.S. and Mexico across the Southern Border.





CBP OIT RECEIVED 10 KEY AWARDS IN 2021 FOR MAJOR ACCOMPLISHMENTS

Evidenced by the awards and recognition above, CBP OIT had one of its best years to date as we continue to focus our efforts through the lens of the six strategic focus areas. This strategy enabled better and faster CBP mission support, while focusing on transparency, affordability, and sustainability.

Three CBP Commissioner Awards

- Special Recognition for Aviation Contact Tracing
- Best Practices Efficiency and Innovation Award
- Trade and Facilitation

TBM Council Public Sector Excellence Award

 2nd federal agency to get one for Cost Transparency

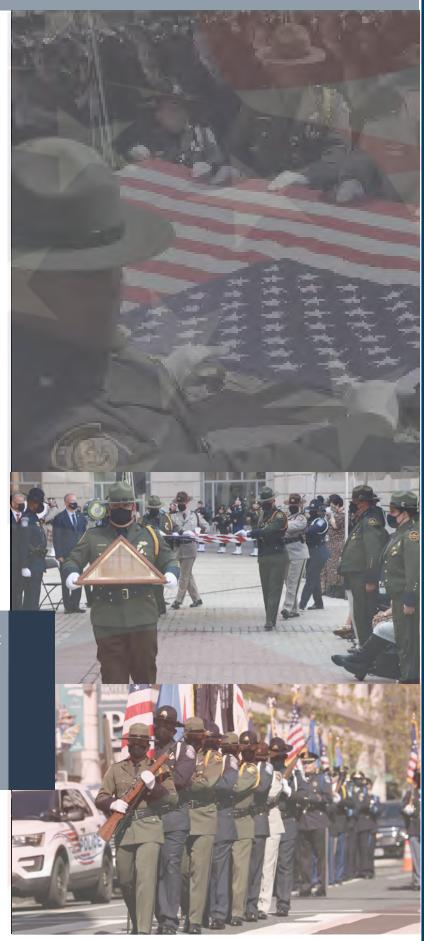
Three Enterprise Services Quarterly Awards

- Journey Level Award;
- MPP Processing Team
- Cloud Modernization Effort

Three CIO awards

 Government CIO of the Year FedScoop 50 Golden Gov of the Year; FedScoop 2021 Best Bosses in Federal IT We honor our employees who have made the ultimate sacrifice. We could not fulfill our mission without these everyday heroes. Our nation will be forever indebted to their service to the country. They served with honor, integrity, courage, and distinction, and they put their service to their country above all.

CBP offers numerous resources to assist employees in dealing with grief, loss, stress, and other challenges. For access to CBP Peer Counselors and other Resiliency Services, the Employee Assistance Program is available 24 hours a day, seven days a week.



WORKFORCE EXPERIENCE INITIATIVES



OIT Leadership believes that an investment in the workforce experience makes work better for people and people better at work. When our people are better equipped to thrive at work, OIT can efficiently drive the mission outcomes. In an effort to promote a results driven culture, OIT used feedback gathered from "Voice of the Employee" focus groups during the previous fiscal year and launched the four initiatives:

Fostering Growth and Development



Fostering growth and development promotes frequent, productive, career-focused check-in conversations between supervisors and supervisees to enable employees to own their career growth and development.

Recognizing OIT Values in Action

Recognizing OIT Values in action encourages employees to more frequently recognize their colleagues for exemplifying OIT's values and contributing to CBPs mission to create a more positive culture.





OIT Rotation Program



OIT Rotation Program provides employees with an opportunity to drive their growth and development, enhance skills, and expand knowledge of OIT's diverse business areas by temporarily filling another assignment or working on a special project.

Resilience Matters

Resilience Matters, which equips supervisors with knowledge and resources to feel more confident and better prepared to lead resilient teams when faced with change and disruption.



DIVERSITY



IN FISCAL YEAR 2021 OIT HOSTED EVENTS TO SUPPORT THE DIVERSITY, EQUITY, AND INCLUSION OBSERVANCES:



- Veterans Day 2020
- National African American History Month
- National Women's History Month
- Arab American Heritage Month
- Bring Your Child to Work Day
- Jewish American Heritage Month
- Asian American Heritage Month and Pacific Islander Month
- National Caribbean American Heritage Month
- LGBTQI + Pride Month
- Family Heritage Month
- Women's Equality Day
- National Hispanic Heritage Month



OUTRO



LOOKING AHEAD

With FY 2021 squarely behind us and at the start of FY 2022, OIT is focused on building from the success of the past and moving forward strategically together with our partners.

In FY 2022, OIT's six Strategic Focus Areas continue to be at the center of OIT's path forward to providing a full range of services to the mission. We are dedicated to continued partnership and support for DHS priorities and are confident in our ability to prepare for, and overcome, historic challenges that may come our way.













OIT aims to enable front-line operators to continue to safeguard borders and process travelers and goods with modern technology and to mitigate the impact of future crisis. Information Technology (IT) and Information Resource Management (IRM) capabilities and services will:

- 1. Enhance scalability of enterprise application capabilities
- 2. Increase infrastructure resiliency and expand the reach IT of services
- 3. Strengthen CBP's cybersecurity posture

An enterprise delivery model highlights OIT's commitment to integration, transparency, and rapid response in FY 2022. Initial enterprise capabilities are centered on tools and best practices that can be leveraged across mission offices and include collaboration tools, common network, cloud, cybersecurity, productivity tools, and biometrics facial comparison. The challenges of FY 2021 were proof that emergent national and global events can dramatically influence our mission and trade partners. In response and preparation, OIT will further the availability and use of cutting-edge technologies in FY 2022 supporting ongoing innovation to keep pace with evolving mission needs.

The accomplishments highlighted in this report showcase CBP OIT's leadership in the federal technology space. We are committed to even further success and look forward to IT services and capabilities to authorized users anywhere, anytime, on any authorized device, securely and reliably, at the speed of mission.





DELIVERING SECURE AND RELIABLE IT SERVICES AND CAPABILITIES AT THE SPEED OF MISSION













